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ESTABLISHED IN 1872

PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

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FIFTY-SECOND YEAR

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Vol. LXXVII. No. 19 NEW YORK AND CHICAGO, NOVEMBER 8, 1923

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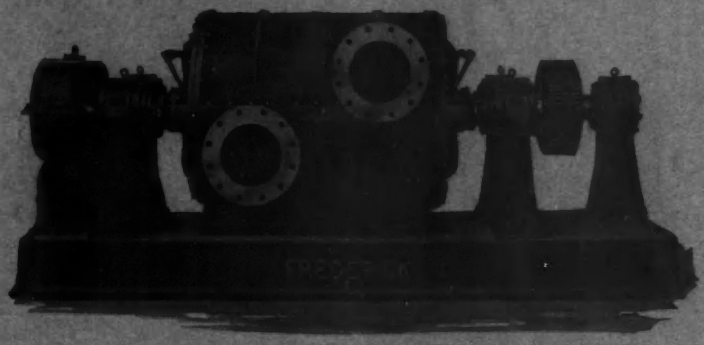

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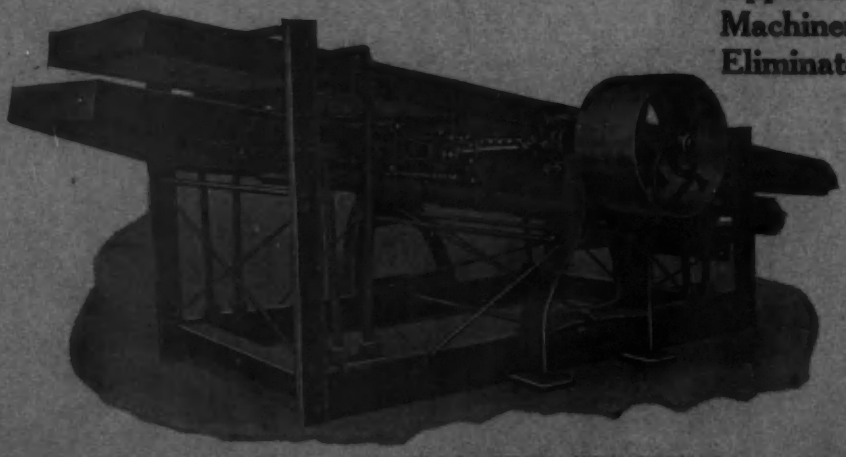

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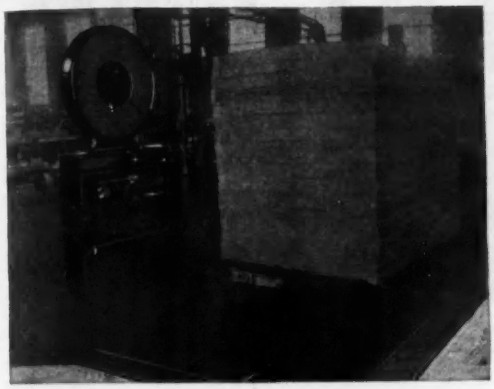

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PAPER TRADE JOURNAL
ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD
FIFTY-SECOND YEAR
Published Every Thursday by the
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Want and For Sale Advertisements, Pages 64 and 65

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ESTABLISHED IN 1872

PAPER TRADE JOURNAL

Vol. LXXVII. No. 19 NEW YORK AND CHICAGO Thursday, November 8, 1923

TORONTO FEELS FOREIGN COMPETITION LESS

Trade Situation Helped Somewhat by This Fact but Stocks Remain Low and Orders Small—Much Interest Centers in Pulpwood Commission Hearings to Be Held During Next Two Weeks—Clarke Brothers, Ltd., to Accept Offer Made for Company's Property—E. B. Eddy Co. Not Interested in Recently Formed Swedish Match Trust—1,593 Square Miles of Ontario Timber Sold.

[FROM OUR REGULAR CORRESPONDENT.]

TORONTO, Ontario, November 5, 1923.—Business in the paper line continues about the same. Stocks are low and orders are small but quite numerous in most lines and are all of the rush variety. It seems impossible to get wholesalers or large consumers to order in advance of actual requirements. News print mills continue active but book and writing plants are not rushed and are operating only from seventy to eighty per cent capacity. Some new lines in the way of cover papers and other specialties have recently come on the market and are meeting with a good reception. There has been a lessening of late in foreign competition which has helped the local situation somewhat. Manufacturing stationers report that business is unusually quiet at this season of the year and the anticipated rush has not materialized. Envelope business is spotty and other lines remain about the same. Collections are improving somewhat but all credits are closely watched. The rag and paper stock trade is dull and mills are buying only from hand to mouth. There is no change in the pulp line with the exception that recent rains have improved the water power and prices are a little easier.

Sittings of Pulpwood Commission

Considerable interest is being taken in the sittings of the Pulpwood Commission which will be held in Ottawa this week and in Toronto next week. Several witnesses will give evidence. The Commission will, after the Christmas holidays, journey west as far as the Pacific Coast. So far the evidence heard has been strongly against the proposed embargo on free-hold wood. In the last nine years the Abitibi Power and Paper Co., of Iroquois Falls, Ont., has paid out over ten million dollars to men working in the bush, to settlers and to contractors. The pulp and paper companies in the northern part of the province provide a market for the settler the minute he steps on to his lot, axe in hand.

Bondholders Accept Offer

At a recent meeting of the first mortgage bondholders of Clarke Brothers, Ltd., Bear River, N. S., which was held in Toronto, it was decided to accept an offer of the purchase of the company's properties submitted by a group of Chicago and Milwaukee business men, closely associated with the pulp and paper industry. The arrangement provides that present first mortgage bondholders are to receive second mortgage refunding bonds of a new company to be formed equivalent to their holdings in Clarke Bros., Limited, now in liquidation, and in addition for each bond held at $50 a share of seven per cent cumulative preferred stock of the new company. The bonds are to bear interest at seven per cent and mature in twenty years.

The American interests will proceed at once with the organization of a new company which will have a Dominion charter. On its board will be three representatives of the buyers, three representatives of the bondholders of Clarke Bros. and a seventh director who shall be independent of either of the parties. The new company will take over the holdings of Clarke Bros., finish the construction of the mill, provide working capital, and put the entire plant in first-class operating condition. To provide working capacity, a first mortgage bond issue amounting to $740,000 is being floated and its purchase by a Chicago trust company has been arranged.

Sale of Ontario Timber Lands

During the last fiscal year there was sold by the Department of Lands and Forests of Ontario timber, areas totalling 1,593 square miles. Of this total 1,399 square miles was disposed of by the Drury Government during the portion of the year in which it held office. The Ferguson administration, since it came into power, has sold only 194 square miles, all of which was composed of burned-over timber areas which required to be disposed of immediately if they were to be realized upon. The number of sales which the Department transacted during the past year was 47, 38 being under the Drury Government.

When Hon. G. Howard Ferguson assumed power he made the statement that his Government would not alienate the public domain until a thorough stock-taking of the natural resources of the province had been carried out and a comprehensive plan formed for realizing upon them to the best advantage. That he has adhered to such a policy is indicated by the Department's statistics, which show that, whereas the late government disposed of 1,399 square miles during eight months of office, the present regime has disposed of only 194 square miles of burned-over country in half that time.

Not in Any Match Trust

It is stated authoritatively that the E. B. Eddy Company, Ltd., of Hull, Que., is not a member of the recently-formed Swedish match trust. The new trust controls the output of matches in some countries and several corporations are reported to have joined the merger but the Eddy Co. is not one of them.

Carton Club Holds Meeting

At a recent meeting of the Toronto Carton Club, paper box manufacturers outside of Toronto were the guests of the club. An interesting address was given by S. J. Frame, of Toronto, secretary-treasurer of the Canadian Paper Box Manufacturers' Association, on the new federal sales tax which goes into effect on January 1 next. F. W. Fisher gave an instructive cost demonstration on a one pound candy box. Addresses were also delivered by C. T. Reid, of Charles Reid & Co., Hamilton, and others. The gathering proved to be one of the best held this year.

Notes and Jottings of Interest

J. J. Herb, of the Westminster Paper Co., New Westminster, B. C., was a visitor to Toronto during the past week. He was formerly superintendent of the Interlake Tissue Mills at Merritton, Ont., until he embarked in the tissue and toilet paper manufacturing line in the west.

Among the callers on the Toronto trade during the past few days

were R. A. Brown of the Canadian Nashua Paper Co., Peterborough, Ont., and B. C. Nelson, of the Kennedy Carliner and Bag Co., Woodstock, Ont.

C. R. Seddon, president of the Paper Makers' Association of Great Britain and Ireland and of the Employers' Federation of Paper Makers of the United Kingdom, spent a few days in Toronto and other points recently and visited a number of mills. Mr. Seddon is managing director of the East Lancashire Paper Mills Co., Limited, Radcliffe, Lancashire.

John F. Ellis, of Toronto, Honorary President of the Canadian Paper Trade Association, who is one of the veterans in the wholesale paper line in Canada, this week celebrated his seventy-eighth birthday and received the congratulations of a host of friends. He is enjoying good health and is at business every day of the week.

The Ontario Government during the past week completed the sale of four timber areas totaling in extent some twenty square miles. The tracts were in all cases burned over once, which require to be disposed of immediately if the merchandise timber and pulpwood on them is to be realized. Good prices were obtained.

A joint meeting of the Educational Committee and of the Committee on Apprentices was held in Toronto last week at which T. L. Crossley presided. The committees are doing good work under the direction of the Canadian Pulp and Paper Association.

Men for the pulpwood camps are becoming more plentiful and the cut during the coming season will be larger than at first anticipated. The demand for wood at the present time is fair.

J. W. Leslie, who for some time has been a member of the Toronto staff of the Interlake Tissue Mills Company, has resigned and is taking a technical course after which he will embark in the automobile business.

G. D. Falkenberg, who is in charge of the board department of Price Brothers and Company, Quebec City, was a caller upon the Toronto trade during the past week.

The Fort William Paper Company, Fort William, Ont., has sent out a large quota of pulpwood cutters to Yonde, its chief camp, 172 miles west on the Grand Trunk line to Sioux Lookout. The average wage paid is $45 a month and board.

Make Reparation Awards

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., November 7, 1923.—Rates on certain kinds of paper in carloads from Shawano and Menasha, Wis., and from St. Joseph, Mo., to McAlester, Muskogee, Tulsa, and Durant, Okla., were found unreasonable on Saturday by the Interstate Commerce Commission and reparation was awarded. The decision was rendered in case No. 13818 of the Hale-Halsell Company, of McAlester, Okla., against the Chicago, Rock Island & Pacific Railway Company, *et al.*

THE VALUE OF PHYSICAL EXAMINATIONS IN PULP AND PAPER MILLS*

BY SETH L. BUSH, MANAGER OF RESEARCH, CROCKER-MCELWAIN COMPANY, CHEMICAL PAPER MFG. COMPANY, HOLYOKE, MASS.

I am not an M. D. Lacking the training of a physician I am therefore unable to handle my subject from the technical viewpoint of the medical man. My interest in physical examinations comes because as an industrial relations man I am convinced that health is an important factor in determining the peace and progress of any industrial group.

Physical examinations in our plants are but a small part of our industrial relations, and our success with them has been influenced largely by the effect of the general program. Because of this, it may be well to sketch briefly the basis of pleasant contact and relationship which had already been established before we considered the question of physical examinations.

About a year before we introduced examinations, we adopted a neutral territory individual agreement, which every employee is obliged to sign, thereby accepting the responsibility of conducting himself with reason while employed and of quitting clean when he goes. This agreement has apparently eliminated from our plants all questions of factional difference, whether they be of union, color, race or creed.

The service differential which we pay in increasing amounts during the first four years of employment, and our guarantee of full time employment after five years, have been attractive.

A very pleasant but informal contact has been established through workmen's committees for discussion of any and all questions of mutual interest.

Helps Obtain Right Kind of Employees

All this has undoubtedly assisted us in obtaining and keeping the right kind of employees, and has overcome the natural disinclination of applicants to undergo a physical examination. The fear of some of our friends that we should be handicapped by a limited number of applications on account of such an employment requirement has not been realized.

I must confess that the first serious thought given to this question of compulsory physical examination of applicants for employment in our plants, was prompted by a selfish motive,—that of dollars and cents.

We had at one plant an employee with strong indications of tubercular infection, who became the victim of a peculiar strain, which he claimed to be the result of an accident in the mill. This case dragged along for many months and before it was finally closed, we were certain that we were being thoroughly imposed upon, and that the employee in question was in no worse condition than when he came into our employ.

About the same time we were in trouble at the other plant, with an employee who claimed he had suffered a bump on the knee, and although it developed shortly after that the most of the trouble with this man came from a serious disease, which he must have contracted some time before he entered our employ,—still it was with the greatest difficulty that we finally closed the case, even after it had been fairly demonstrated that the employee was a malingerer.

Then we had one or two suspicious hernia cases which gave us some concern. We discovered that we could look to the State Accident Board for very little sympathy.

Examination a Protection

Altogether the situation seemed so grave that we talked the matter over frankly with our workmen's committees, and together decided that physical examination of applicants would be mutually advantageous to employees and management. We concluded that such examinations would protect employees from new comers who might become a health hazard to them and an accident compensation burden to the company.

The more we discussed the matter, the more we felt certain that there would also be a distinct advantage to many of the applicants themselves, through their becoming acquainted with their own physical condition.

(*Continued on page 37*)

*A paper read October 2 before the Paper and Pulp Section at the National Safety Congress in Buffalo.

OCTOBER FIGURES STUDIED BY THE PHILADELPHIA TRADE

Day by Day Observations for the Past Month Tend to Increase Optimism—Rumors Regarding Two New Enterprises Gain Circulation—Agitation for Local Paper Industries Exchange Gains Followers—Atlantic Paper Co. Occupies New Home at 919 Walnut Street—Paper Survey of the Third District Federal Reserve Bank—Personal Notes and Items of General Trade Interest.

[FROM OUR REGULAR CORRESPONDENT.]

PHILADELPHIA, Pa., November 5, 1923.—The story of October told by the figures for the month just completed by the Accounting Departments of the several distributors tells stories as surprising as they were welcome to many of those in the trade. Their day by day observations were that while trading generally was showing an upward tendency it fell below what might be regarded as the normal. One of the larger firms which gives particular attention to its financial statistics and which has established for itself a figure of normality for every month of the year, based largely on those of 1919 but also embracing other elements which must be considered in order to fairly determine a normal and give a fair basis of comparison, practically opened its books to THE PAPER TRADE JOURNAL representative and revealed figures which showed that the October business had been slightly in excess of normal. A number of other distributors not going into as much detail, however, confined by their statements the sound conditions of the October market and reiterated their confidence in the future.

In the fine paper division prices continued on their stabilized basis; in the coarse division there came during the week a further recession of half a cent in Number 1 Kraft, and a decline from one-quarter cent in screenings and a few other of the cheaper grades. Tissues continued weak and sluggish but at the previous week's levels. Announcement of a five dollar drop to fifty dollars a ton for news and chip board was made during the week by the Philadelphia Paper Manufacturing Company.

Stock Market Quiet

The paper stock market continued rather quiet and with a decline of the limited mill buying previously experienced but the trade declares that prices must in fairness be quoted at the old level because they persist in the statement that many sales still are being made at them and that they represent the real and fundamental schedule of values in the paper stock trade.

Federal Reserve Report

Making a survey of October business in the paper industry generally the Third or Philadelphia District Federal Reserve Bank says under date of November 1 in its official publication:

"Most grades of paper are in better request than they were a month ago, but only in the book and fine paper grades as the demand shows a marked increase. Coarse papers such as wrappings and Krafts are in only slightly greater call than last months, and the mills making these grades state that business is rather poor. Glazed papers and wall papers are in good demand and manufacturers of these are working at capacity. Book and fine papers are selling in greater volume than they did during September and the mills are operating at about 80 per cent capacity. Toilet tissues and crepe towels, and tissues are in poor request; consequently makers of these are operating at only fifty or sixty per cent of capacity. The demand for building papers and building boards has declined sharply and manufacturers report that new orders are small. Paper converters, particularly envelope makers report that their products are in good request and envelope factories are operating at 80 or 85 per cent of capacity. Box board mills are busier than they were a month ago and news and chip boards are selling in fair volume. In general the demand for paper is fair and most manufacturers report that it is equal to or slightly greater than it was in October, 1922."

Prospective New Enterprises

As the year ends precedence shows that reports of prospective new enterprises get into circulation. They are not always realized. This year there is again going trade rounds reports of two enterprises one in the manufacturing and the other in the distributing business. Representative Durkee of the Reliance Paper Mill Corporation of New York was a caller in trade circles during the week and coincident with his appearance there came into circulation the report that this organization or one allied with it expects shortly to establish a three machine paper mill with a daily capacity of 150 tons of hangings and news and that it will be located at 36th and Reed streets in the building formerly occupied by the Philadelphia Rubber Works. Several weeks ago there were in circulation reports of a new enterprise to be started in this city for the reclamation of old rubber tires and the use and disposal of the cotton content for paper making. It is not known whether those reports in any way are related to the project at 36th and Reed streets. The other trade rumor deals with the establishment early in the New Year of a new fine and coarse paper distributing business with a capital of $100,000 said already to have been pledged to the prime mover in the enterprise, a minor official of one of the best known distributors in the city.

Prospects of (Phila.) Exchange

Trade interest is increasingly concerning itself with the question of establishing here a Paper Industries Exchange similar to the one apparently in successful operation in Chicago but with modifications to meet local conditions. Sentiment, however, has not yet crystalized itself sufficiently to warrant issuance of a call for a meeting. The private expressions of opinion which have been secured by a little group of leaders in the movement all have been favorable, and there is little doubt that a formal meeting shortly will be held. Those chiefly interested were those who studied either in person or by correspondence the Chicago Exchange and it is the inspiration of the pending discussion.

Atlantic Paper Co. In New Home

Settlement of the Atlantic Paper Company in its new combined warehouse, sales office and executive headquarters on the second floor of the Robert Morris Building, 919 Walnut street was completed during the week. Here the firm occupies the whole second floor running from Walnut street back to Sansom street and containing an area of fourteen thousand square feet. The new executive offices occupy the front of the building and are bright with their furnishings of golden oak and cream walls and ceiling. The remainder of the floor is given over to stock purposes of which a very large amount is carried. The Sansom street side is appropriately located for shipping purposes, giving a rear exit on one of the centrally located streets and providing the firm with facilities that will enable the speed-up of delivery. The Atlantic Paper Company was established in 1909 by members who long were identified with the paper industry of Philadelphia and all of whom were former associates in the firm of Megargee-Hare Company. Upon the dissolution of the Megargee-Hare Company Thomas N. Simpson, Thomas J. Hare, George N. Hassan, R. Peal Bentley members of that firm with Frank J. Barthmaier of the D. L. Ward Company organized the present concern and secured headquarters on Cherry street above Sixth street.

Trade News Notes

The contract for a turbine unit with a capacity of 4,550 horsepower is being carried out by the I. P. Morris Department of the

William Cramp and Sons, Ship and Engine Building Company, for the St. Croix Paper Company. It is to be installed in the paper mill of the St. Croix Company in Maine. H. Burchard Taylor, vice-president of the Cramp Company and president of the Pelton Water Wheel Company of San Francisco, has been elected a vice-president of the American Society of Mechanical Engineers.

Final disposition has been made of the Argo Mills Property in Gloucester, N. J., which promoters recently planned to convert into a mill for the manufacture of news print paper from Canadian or Swedish pulp. The property has been purchased by the Armstrong Cork Company, and will be used for linoleum manufacture.

An interesting visitor of the week was Frank Robertson of William Robertson Sons, Putney, Vt., with a line of tissues. The Robertson Mill is reported to be very busy on tissues.

Wedding bells rang recently in Atlantic City to celebrate the nuptials of Harry J. Fleming, head of the H. J. Fleming Paper Company, and Miss Anna M. Denney, daughter of Mr. and Mrs. William Denney. The ceremony took place at St. James R. C. Church, Atlantic City.

Miers Busch was elected to the newly created position of First vice-president of the Pennsylvania Salt Manufacturing Company, at the organization meeting of directors held during the week. George Fales Baker was re-elected president; Edward E. Armstrong, vice-president and works manager; Charles M. Butterworth, vice-president and general sales agent; L. A. Smith, secretary and treasurer and Warren R. Over assistant treasurer.

Simon Walter, head of S. Walter Company, Inc., has just returned from a business and pleasure trip as far West as French Lick Springs.

Louis Hayward of the Fox River Paper Company made trade rounds during the week.

N. S. Winslow, sales manager of the card board and cover paper department, of the A. M. Collins Manufacturing Company attended the Direct by Mail Advertising Convention in St. Louis. The Collins Company is getting out a new sample book of Damascan Cover Papers.

Trade Marks Department

CONDUCTED BY NATIONAL TRADE-MARK CO., WASHINGTON, D. C.

The following trade-mark applications pertinent to the paper field pending in the United States Patent Office, which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade Mark Company, Barrister Bldg., Washington, D. C., trade-mark specialists. As an additional service feature to its readers, PAPER TRADE JOURNAL gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering.

KOPYALL—No. 171,402. H. P. Andrews Paper Co., New York City. For paper suitable for making copies from stencil impressions.

MENICOPY—No. 171,406. H. P. Andrews Paper Co., New York City. For paper suitable for making copies from stencil impressions.

CODORUS—No. 183,505. Schmidt & Ault Paper Co., York, Pa. For box board.

EVER-WARE—No. 183,715. McLaurin-Jones Co., Brookfield, Mass. For chocolate-dipping paper.

PRUV-BEST—No. 183,716. McLaurin-Jones Co., Brookfield, Mass. For proofing paper.

Postpone Grade Commission Case

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., November 7, 1923.—Final argument on a stipulation prepared by the Federal Trade Commission in its case against the Pacific States Paper Trade Association has been postposed from November 14 to November 26. A great deal of interest has been aroused in the paper industry over this case because its final determination may affect other associations.

Recent Incorporations

Holyoke Paper Products Company, Massachusetts, 1,000 shares preferred stock, $100 each; 2,000 common, no par value.

Protex Paper Products Company, Inc., Brooklyn, New York. Capitalized for $25,000. Directors, Max Frost, Abraham Stone and Samuel Friedman, all of Brooklyn.

Seacoast Paper Mills, Inc., East Orange, New Jersey, capitalized for $5,000.

Fall Conference Caused Busy Times

Busy times in the offices of the American Paper and Pulp Association have followed the Fifth Fall Business Conference in Chicago and other meetings in the Middle West, attended by different members of the association's executive staff.

Dr. Hugh P. Baker, executive secretary of the association, after the Chicago conference visited paper mills in Minnesota, addressed faculty members of the University of Minnesota interested in forestry problems on the need for co-operation between industry and the forestry schools for the better handling of the country's forest resources, and then went to Wausau for the conference, which resulted in the formation of the Wisconsin Forest Protective Association. On the return from Wisconsin he attended the annual convention at Chicago of the American Trade Association Executives, where he spoke on standardization in industry. On the trip back east he stopped at Lockport, N. Y., to visit mills in that region, and was a speaker at the Lockport Rotary Club.

While Dr. Baker was in the west, O. M. Porter, assistant secretary of the association, attended the joint convention at Appleton of the Technical, Cost and Superintendents Associations, and spoke before the convention on the need for intensive study of the raw material problem.

Immediately upon the return of Dr. Baker from the West, Henry W. Stokes, president of the association, came to New York to plan the association's program for the next six months, until the April annual meeting in New York.

Mr. Stokes was asked to attend a conference of business men representing trade associations, at which Mr. Hoover took up the question of trade with Japan, but was represented by D. A. Smith, of the District of Columbia Manufacturing Company.

Film Showing Snow Motor

The projected field demonstration in the snow covered forests of the north woods of a snow motor by the Woodlands Section of the American Paper and Pulp Association is resulting in many calls from northern pulp mills and motion picture houses catering to paper mill communities for the motion picture film showing the snow motor in action. The pictures were taken last year in the West, and are being shown so that practical woodsmen can devise in advance some difficult tests to put this machine to when the demonstration is held in mid-winter. The film is already scheduled for showings in Carthage, Au Sable Forks, N. Y., as well as Sheldon Springs, Vt., and Austin, Pa.

Disposes of Indianapolis Division

INDIANAPOLIS, Ind., November 6, 1923.—The Whitaker Paper Company announces that it has disposed of its Indianapolis division to the Indiana Paper Company, a new corporation to be incorporated under the laws of the state of Indiana. The officers of the new corporation will be Fred J. Ostermeyer, president; Harry C. Ostermeyer, vice-president; Elmer H. Ostermeyer, secretary-treasurer. The Indiana Paper Company will be a service house of the American Writing Paper Company and will carry a complete line of "Eagle A" papers and will continue to handle Basic Bond in its territory.

Nothing takes the place of Leather

Every *MANUFACTURER, PLANT OWNER* and *ENGINEER* can enjoy this service without cost or obligation

THE lack of adequate data on power transmission has been the cause of millions of dollars lost each year by factory owners. Because belting installations seem so simple a job, few manufacturers realize that, by perhaps varying the size or type of belt, they often can effect a large saving in the cost of production.

The Research Division of The Leather Belting Exchange has undertaken the work of giving reliable and dependable information on belting to any manufacturer desiring it. This service is entirely without cost or obligation. It is financed by the leading leather belting manufacturers in the interest of better power transmission for industry.

What the Research Division will do:

No. 1—Upon request, we will send you the following booklets, free of charge:

(a) "The Comparative Values of Different Types of Belting," including tests by Mellon Institute and Cornell University.

(b) "A Report on Comparative Tests of the Flesh and Grain Sides of Leather Belting." By R. F. Jones, The Leather Belting Exchange Foundation, Cornell University.

(c) "How a Leather Belt Transmits Power." By J. Edgar Rhoads and Dr. R. R. Tatnall.

(d) "Specifications for Leather Belting." Prepared by collaboration of the Bureau of Standards, Washington, D. C.

(e) "Making Leather Belts Endless." By Louis W. Arny, The Leather Belting Exchange.

(f) "Law of Variation Between the Width and Transmitting Capacity of Leather Belting." By R. F. Jones, Research Engineer, Cornell University.

No. 2—The Leather Belting Exchange has a research foundation at Cornell University. Here competent engineers are continually at work developing new and valuable data on power transmission. They will gladly discuss individual belting problems with manufacturers, and will also mail, free, the results of such experiments and developments as may be of interest to industrial users of belting.

Whether you are satisfied with your belting equipment now or not—and especially if you contemplate buying new belting—it will pay you to have this valuable information on hand. Clip the coupon attached and send it in to-day.

An Interesting Exhibit

The Leather Belting Exchange has an interesting exhibit on power transmission which shows, by actual test, the comparative transmission power of all types of belting. See it at the

SECOND NATIONAL EXPOSITION OF POWER & MECHANICAL ENGINEERING
Grand Central Palace
New York City, N. Y.
December 3rd to December 8th

Address—Research Division

THE LEATHER BELTING EXCHANGE, Forrest Bldg., Philadelphia

The Leather Belting Exchange is not a company operating for a profit or for selling belts. It was organized by the leading leather belting manufacturers of America in the desire to furnish impartial information on leather belting to manufacturers, engineers, and technical schools. It maintains a competent staff of experts in Philadelphia and at Cornell University who will gladly answer questions on power transmission without cost or obligation. In the broader interest of leather, it is affiliated with the leading Sole and Belting Leather Tanners in their nation-wide campaign on leather and the tanning industry. For information regarding leather, itself, address

AMERICAN SOLE *and* BELTING LEATHER TANNERS, 17 Battery Place, New York

FREE

THE LEATHER BELTING EXCHANGE, Forrest Building, Philadelphia.
Please send me your 6 booklets on power transmission—FREE. Also, without obligation, please use on your mailing list for subsequent information developed by your research work on belting.

Name.....
Name of firm.....
Address.....
City..... Position held.....

LITTLE CHANGE REPORTED IN CHICAGO CONDITIONS

Finer Grades of Paper Stock Show No Increased Demand and Waste Paper Suffers a Slump—Three New Salesmen Added to Staff of A. C. Allen Paper Co.—Plans Being Made for Annual Meeting of National Container Association—Earl G. Meek and Douglas Hunter Join Chicago Paper Company's Sales Force—George W. Gair and W. H. Richardson Visitors of Paper Exchange.

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, Ill., November 5, 1923.—None of the finer grades of paper stock registered an increase in demand over the past week of a nature that could be termed spectacular. Some paper houses report business increasing steadily while others claim that the demand is not even up to normal, but a continuation of summer conditions. One of the former is A. C. Allen, president of the A. C. Allen Paper Company, which is a wholesale house. Mr. Allen states that the demand is looking up and buyers are getting actively into the market again. He expects this situation to become better within the next few weeks, and holding well through the winter months.

Wrapping paper has not experienced what some of the other branches of the paper industry have, namely, a quickened demand.

A decided slump has taken place in the waste paper market for Chicago. The demand has been light for the past several weeks and it is reported now to be less than before. Prices on all items have taken a slide from 20 to 25 per cent. Mixed papers were actually sold last week in quantities at 80 cents per hundred. Usually this dullness comes about the month of December, but this year it occurred a month earlier. Waste paper men believe that the earlier coming of the slackness will mean also that it will be passed that much sooner and the real business begin again in earnest.

Visits Chicago Paper Exchange

George W. Gair, of the Robert Gair Company, New York, president of the Paper Industries Exchange, and W. H. Richardson, of Cincinnati, a director, were visitors and interested spectators at last Thursday's session of the Chicago Exchange. Mr. Gair stated that the Paper Industries Exchange now has passed the experimental stage and is a success. He said that the movement had been a success from the start and it is but a matter of a short time when the membership will be greatly increased because its importance is now being realized by all branches of the paper industry. Mr. Gair stated that there has been a little lull in the demand, but he predicted a substantial increase in the volume of business after the first of the year.

A. C. Allen Puts on Three New Salesmen

It is announced by A. C. Allen, president of the A. C. Allen Paper Company, that three new salesmen have been put on recently. The first is E. J. Amberg, who was formerly with the Amberg File and Index Company. The second is A. F. Delporte, who was previously with George D. Barnard & Co., the largest printing house in St. Louis. The third is Ira Meyers, who had been connected with the Pilcher-Hamilton Company, of Chicago.

Makes Big Plans for Annual

On Tuesday and Wednesday, November 20 and 21, the National Container Association will hold its annual meeting at the Biltmore Hotel, New York City. A meeting of the Executive Committee will be held on Monday, November 19. This information is given out from the office of Acting Secretary H. S. Adler, in the Transportation Building, Chicago.

A most important part of the convention will be the election of officers to take place on Tuesday. Standardization, Statistical and Sales Promotion Committee will also be appointed.

An interesting and instructive program is being arranged, including entertainment features. Invitations are being extended to non-member manufacturers to join in the sessions.

The Standardization Committee has been giving consideration to two subjects which are considered of unusual importance at this time. The report of this committee will be given at the meeting.

The association will decide upon a program to be inaugurated in the near future with a view to increasing the use of fiber boxes through sales promotion. Consideration will also be given to increasing the scope of the research work now being carried on at the Mellon Institute of Industrial Research.

Some prominent speakers are scheduled to appear on the program. Indications are that the meeting will be well attended and members and invited guests who have not already arranged for their hotel accommodations are invited to address the association at once in order that this matter may be looked after for them.

Meek and Hunter With Chicago Paper

Earl G. Meek and Douglas Hunter have recently joined the sales force of the Chicago Paper Company, according to an announcement given out by W. N. Gillette, vice-president of the concern. Both are well known in the paper trade.

"Foldwell" Exhibit at Convention

The Chicago Paper Company staged an interesting booth exhibit at the Direct Mail Advertising Association Convention in St. Louis, Mo., October 24, 25 and 26. It featured entirely "Foldwell" paper, for which the company is the exclusive representative. The exhibit showed all types of direct advertising printed on this stock It showed complete series by leading advertisers of the country. The exhibit included demonstrations of Foldwell used for mounted window and store displays, four-page illustrated sales letters, house organs that were mailed without envelope protection, broadsides, folders, book covers printed in color, loose leaf sales manuals and catalogues printed on Foldwell because of the constant usage to which the catalogues were expected to be put.

Activities of the Paper Trade

R. A. Fuller, of the Gilbert Paper Company, Menasha, Wis., was a visitor in Chicago last week. Another visitor was Kimberly Stewart, of the Neenah Paper Company, Neenah, Wis.

W. N. Gillette, vice-president of the Chicago Paper Company, Chicago, has returned from a duck hunting trip.

S. J. Hodgins, president of the Central Topeka Paper Company, Topeka, Kans., stopped in the Windy City last week.

George S. Johnston, sales manager for the Western Newspaper Union, of Omaha, Neb., was another caller in Chicago.

Bob Butterworth, manager of the Chicago office of the Champion Coated Paper Company, spent several days at the plant in Hamilton, Ohio, the past week.

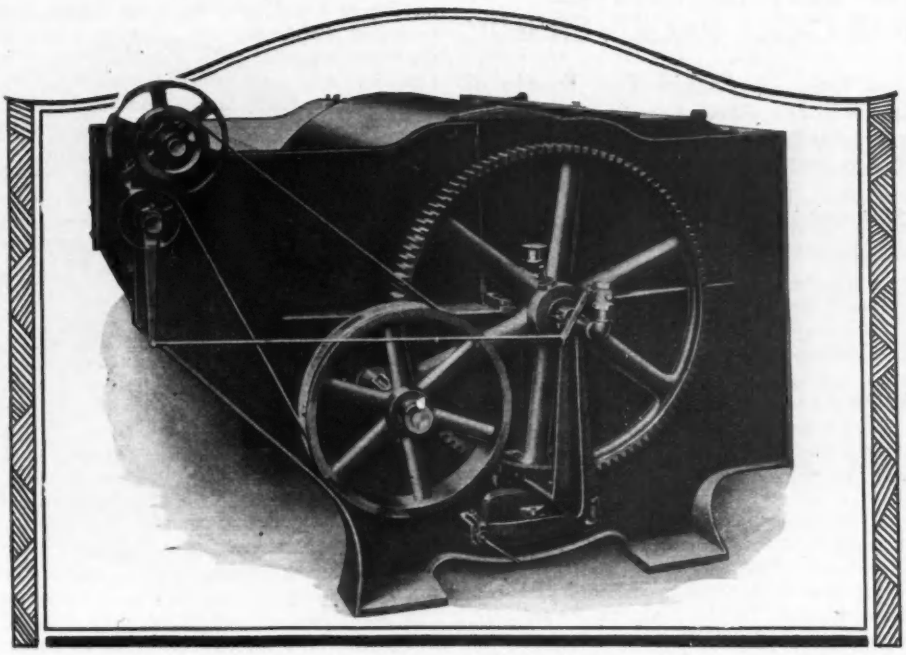
B. P. Walker, State Printer for the State of Kansas, spent part of last week in Chicago on business.

Planning for New Plant

DAYTON, Ohio, November 6, 1923.—The Elam Paper Company of Marion, Ind., has plans under way for construction of a new two-story plant, totalling 70,000 square feet of floor space for its proposed new mill to be erected on a Dayton site. The present works at Marion will be vacated.

Buy Site for Pulp and Paper Mill

PORT HURON, Mich., November 6, 1923.—The Dunn Sulphite and Paper Company has bought property on the St. Clair River as a site for a new pulp and paper mill. The cost of the proposed mill and machinery is estimated at $500,000.



A Profitable Investment

A Bird Save-all is recovering on the average of two tons of stock a day for one up-to-date paper mill. Figured conservatively the value of the stock recovered is approximately $15,000.00.

Even if a Bird Save-all recovers only 500 pounds of stock a day it will pay for itself in less than a year's time.

A Bird Save-all requires practically no attention from machine tenders. Wires last a year or longer. It operates automatically on less than 1 H.P.

The Bird Save-all immediately detects leaks which, if undiscovered, would cause enormous losses.

Hundreds of pulp and paper mills have found that the Bird Save-all is a profitable investment. Catalog on request.

BIRD MACHINE COMPANY

South Walpole Massachusetts

Western Representative:
T. H. Savery, Jr., 1718 Republic Bldg.
Chicago, Ill.

Canadian Builders of Bird Machines
Canadian Ingersoll-Rand Co., Ltd.
260 St. James St.
Montreal, Canada

The BIRD SAVE-ALL

5914

MONTREAL CONCERN SAVES BY BECKER RECEIVERSHIP

Saguenay Pulp and Paper Co. Explains That Troubles of English Firm Will Not Affect Canadian Interests — Frank D. J. Barnjum Points Out "Joker" in Secret Order-in-Council—Strike of New York Pressmen Caused Falling Off in News Print Exports—Bondholders Decide on Reorganization of Clarke Bros., Ltd.—Great Shortage of Labor Experienced in Ottawa Valley.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., November 6, 1923.—Much interest has been aroused here in the news from London that the firm of Becker & Co., Ltd., has gone into a receivership. As is generally known, the Saguenay Pulp and Paper Company, and some of its subsidiaries, have been doing a large business with this firm, under contract. In view of the importance of the situation, Senator F. L. Beique, president of the Saguenay Pulp and Paper Company, has given out the following statement:

"Becker & Co., Ltd., of London, England, have been acting for several years as selling agents of the Chicoutimi Pulp Company, the main subsidiary of Saguenay Pulp and Paper Company. They occupied an outstanding position in the pulp and paper industry, their activities covering Canada, England and France, and they appear to have enjoyed a very high credit.

"Last year the Chicoutimi Pulp Company, through Becker & Co., Ltd., entered into contract with a number of English paper mills for the supply of pulp to be taken over for a period of ten years, on the basis of cost plus a reasonable profit. These contracts cover only a portion of the output of the Chicoutimi Mills and the company now enjoys the advantage of a keen demand for its pulp at remunerative prices.

"When the ten-year contracts were negotiated a larger number of contracts than were accepted by the company were contemplated, and for the protection of the purchaser and the manufacturer a committee of management was arranged, the personnel of which was to be acceptable to both Sir Frederick Becker and the company. The purpose of this committee of management was to ensure that the quality of the pulp would be satisfactory and the cost reasonable. Certain diversions of views existing between the board of directors of the company and Sir Frederick Becker, a termination of the employment of Becker & Co., Ltd., as selling agents of the products of the Chicoutimi Company, was contemplated for some time. Of course, the situation of Becker & Co., of London, England, has hastened a decision in this regard.

"The president and the board of directors of the Chicoutimi Pulp Company do not consider that the cancellation of the agency affects the contracts entered into by the company with responsible paper mills of Egland, and they look upon the severance of their relations with Becker & Co., Ltd., as having some advantages, among which will be the saving of the larger part of commissions, amounting to about $160,000 per year."

"Secret" Order in Council

A lively discussion is going in the newspapers here in regard to what is called the secret Order-in-Council issued by the Government, exempting certain pulpwood from the operations of an embargo, should the Government decide to impose an embargo later on. The text of the Order-in-Council is now available, and is as follows:

"His Excellency, the Governor-General in Council, on the recommendation of the Right Hon. W. L. Mackenzie King, the Prime Minister, and under and in virtue of the powers, conferred by the Export Act, as amended, is pleased to order, and doth hereby order and declare, with reference to the provisions of an Act to amend the Export Act, Chapter 46, of the statutes passed at the present session of Parliament, that whatever regulations may be made thereunder regarding the export of pulpwood from Canada, such regulations shall not be made applicable to or affect the exportation of pulpwood exported in fulfilment and in pursuance of the terms of bona fide written contracts duly executed and delivered previous to June 1, 1923; provided, however, that in the case of contracts calling for deliveries previous to June 1, 1923; provided, however, that in the case of contracts calling for deliveries over a period of more than ten years from the date thereof the exemption hereby granted shall not extend beyond the period of ten years from the date hereof. (Signed) E. J. Lemaire, 'Clerk of the Privy Council.'"

Frank D. J. Barnjum, in commenting on the reply of the Government to the effect that there was nothing unusual in not publishing the Order-in-Council in the *Official Gazette*, says:

"The reply of the Government at Ottawa to the serious charges made by me in my letter to the chairman of the royal pulpwood commission is so weak as to call for no comment by me. It entirely evades one of the main points at issue, namely: Why should the people be forced to bear the expense of a royal commission when any findings by it have already been completely nullified by the Government?

"The big 'joker' in the Order-in-Council is, of course, the ten-year period of the exemption; as everyone knows that with a time limit of ten years, the Americans would strip the country bare.

"If the Order-in-Council was included in the papers delivered by the Government to the commission, the information it obtained has been very carefully guarded from the public, as it has never been given the slightest publicity in the daily press till published in my letter to the chairman of the commission."

Big Timber Limits Put Up for Sale

The terms decided upon by the Quebec Government, through the Department of Lands and Forests, in connection with an auction of timber limits in the basin of the Minicouagan River towards the end of November, will make it necessary for the successful tenderer to spend between $5,000,000 and $10,000,000 in the development first of a pulp mill and later on of a paper mill in this province. The limits which are now being put up for auction are located next those leased some time ago by the Ontario Paper Company, and contain also water powers.

The successful tenderer, it is provided, must erect a mill within the next five years within a distance of eight miles of one of twenty-two cities or towns in the province. The mill must have a daily production of at least 200 tons of pulp and 100 tons of paper, but within seven years of the signing of the contract the daily capacity must be 200 tons of paper.

In addition to a payment required of $400 per square mile, the tenders call for a bonus over and above the ordinary stumpage dues now in force. In order to prevent speculators from interfering with bona fide bidders, a deposit of $150,000 is required before the bid will be considered. This deposit will be confiscated in case the bidder does not provide at least one bid during the auction sale.

How Strike Affected Canada

As the result of the pressmen's strike in New York City, a considerable falling off in the export of news print from Canada is reported in the official export figures for September. For the first time during the present year the news print exports show a decline as compared with the figures for the month just preceding, the exports for September being down to 90,929 tons, as compared with 104,567 tons in August. The total value of the pulp and paper exports for September were $11,715,869. This was a decline over the previous month of $1,579,400, but an increase of $1,393,586, over September, 1922.

(*Continued on page* 52)

"ALL works of quality must bear a price in proportion to the time, skill, and risk attending their invention and manufacture. Those things called dear are, when justly estimated, cheapest."

John Ruskin

Why We are making *a* Quality Product

Experience has proven that in the long run the most successful firms are those who give the best value; the finest quality at a price fair to both the purchaser and the manufacturer. That is why we are producing paper and pulp mill machinery of especially high quality. Perhaps equipment of this better quality costs a bit more to install, but this little bit more is returned many times by the greater efficiency and longer life of the machine. We are builders of Niagara Beaters, Holland Type Beaters, Washers, Bleachers, Centrifugal Pumps, Stuff Pumps, Wet Machines, Board Machines, Cylinder Machines, etc.

Valley Iron Works Company

Plant:
APPLETON, WIS.

New York Office:
350 MADISON AVENUE

A postcard or letter will bring to you an attractive booklet telling you more regarding our product. Write for it today.

PAPER AND PULP PRODUCTION DURING MONTH OF SEPTEMBER

Data Collected from Varied Sources Shows Total Paper Production Was 378,652 Tons with Stock on Hand at End of Month Amounting to 204,463 Tons—Comparative Report of Operations of Mills for September and August —Production of All Grades of Pulp Amounted to 149,999 Tons with 98,409 Tons on Hand at Close of Month.

The statistical summary of the Paper Industry is submitted herewith for the month of September, 1913, and previous months by the American Paper and Pulp Association.

The following associations co-operate in the collection and compilation of data from their members, namely: Binders Board Manufacturers' Association, Converting Paper Mills Association, Cover Paper Manufacturers' Association, Newsprint Service Bureau, Tissue Paper Manufacturers' Association, Wrapping Paper Manufacturers' Service Bureau and Writing Paper Manufacturers' Association.

Tonnage Summary

Grade	Number of Mills	Stocks on hand first of month, Net tons	Production, Net tons	Shipments, Net tons	Stocks on hand end of month, Net tons
News print:					
September, 1923	67	24,694	110,209	110,240	24,663
August, 1923	67	22,243	132,604	129,173	25,674
July, 1923	67	19,791	125,768	124,322	21,237
June, 1923	65	18,133	133,692	132,311	19,514
Book (M. E. S. S. C and Coated):					
September, 1923	64	24,919	51,205	50,453	25,671
August, 1923	61	22,935	59,744	58,708	23,971
July, 1923	56	23,053	45,156	44,995	23,214
June, 1923	48	24,570	50,964	48,569	26,965
Paperboard—Total (Straw Fiber, Leather Chip, Box, etc.):					
September, 1923	113	29,506	96,477	96,669	29,314
August, 1923	114	26,396	117,932	116,551	27,777
July, 1923	115	27,931	96,362	97,114	27,179
June, 1923	101	23,560	105,218	104,052	24,726
Boxboard (Included in Paperboard):					
September, 1923	58	11,021	60,434	60,742	10,713
August, 1923	63	10,376	82,062	81,325	11,113
July, 1923	62	13,212	64,283	65,239	12,256
June, 1923	54	9,788	65,394	64,371	10,811
Wrapping (Kraft, Manila, Fiber, Etc.):					
September, 1923	91	47,291	49,678	48,473	48,496
August, 1923	89	43,598	50,563	47,348	46,813
July, 1923	87	38,647	47,796	43,038	43,405
June, 1923	83	35,533	54,966	50,951	39,548
Bag (All Kinds):					
September, 1923	29	6,354	6,230	6,938	5,646
August, 1923	28	6,400	8,720	8,306	6,814
July, 1923	28	6,280	5,210	5,907	5,583
June, 1923	25	5,788	9,247	8,174	6,861
Fine (Writing, Bonds, Ledgers, Etc.):					
September, 1923	86	37,621	23,395	22,783	38,233
August, 1923	86	37,417	22,859	23,097	37,179
July, 1923	86	37,482	21,650	21,347	37,785
June, 1923	88	35,179	27,637	26,500	36,316
Tissue (Toilet, Crepe, Fruit Wrappers, Etc.):					
September, 1923	48	8,838	9,457	9,900	8,395
August, 1923	47	9,813	9,192	9,917	9,088
July, 1923	46	9,520	8,366	8,403	9,483
June, 1923	44	8,080	10,328	9,217	9,191
Hanging (No. 2 Blank, Oatmeal, Tile, Etc.):					
September, 1923	10	4,236	5,513	5,000	4,749
August, 1923	10	3,266	5,284	4,314	4,236
July, 1923	10	2,713	5,370	4,623	3,460
June, 1923	9	926	4,158	3,617	1,467
Felts and Building (Roofing, Sheathing, Etc.):					
September, 1923	16	4,054	12,073	12,453	3,674
August, 1923	16	2,550	11,320	11,452	2,418
July, 1923	16	2,255	13,361	13,168	2,448
June, 1923	15	2,170	9,707	9,508	2,369
Other Grades (Specialties Not Otherwise Classified):					
September, 1923	65	15,896	14,469	14,743	15,622
August, 1923	65	16,319	15,288	14,429	17,178
July, 1923	64	13,134	14,752	12,993	14,713
June, 1923	60	11,351	17,439	16,794	11,996
Total—All Grades:					
September, 1923	..	203,409	378,706	377,652	204,463
August, 1923	..	[1]190,937	433,506	423,295	201,148
July, 1923	..	[1]180,806	383,611	375,910	188,507
June, 1923	..	[1]165,290	423,356	409,693	178,953

[1]Due to an error in compiling the August report, boxboard was included twice in the totals and thereby made the totals larger by that amount. The totals for the respective groups are correct and remain unchanged from figures given in August summary.

Comparative Report of Operations of Identical Paper Mills for the Months of September and August, 1923

Grade	Number of mills	Stocks on hand first of month	Production	Shipments	Stocks on hand end of month
News print:					
September, 1923	59	24,694	110,209	110,240	24,663
August, 1923	59	21,759	128,276	124,972	25,063
Book:					
September, 1923	60	23,714	50,441	49,859	24,296
August, 1923	60	22,722	59,289	58,275	23,736
Paperboard:					
September, 1923	103	24,869	87,327	88,176	24,020
August, 1923	103	23,869	103,411	102,313	24,967
Boxboard:					
September, 1923	55	10,705	58,727	59,158	10,274
August, 1923	55	9,968	72,207	71,471	10,704
Wrapping:					
September, 1923	87	46,591	48,051	46,695	47,947
August, 1923	87	43,351	50,267	47,004	46,614
Bag:					
September, 1923	26	6,057	6,123	6,541	5,639
August, 1923	26	5,595	7,101	6,619	6,077
Fine:					
September, 1923	86	37,621	23,395	22,783	38,233
August, 1923	86	37,417	22,859	23,097	37,179
Tissue:					
September, 1923	45	8,404	8,213	8,583	8,034
August, 1923	45	9,677	8,430	9,204	8,903
Hanging:					
September, 1923	10	4,236	5,513	5,000	4,749
August, 1923	10	3,266	5,284	4,314	4,236
Felts and Building:					
September, 1923	13	2,278	7,665	7,993	1,950
August, 1923	13	2,431	8,976	9,129	2,278
Other Grades:					
September, 1923	62	14,474	12,820	12,950	14,344
August, 1923	62	13,711	14,524	13,758	14,477
Total—All Grades:					
September, 1923	..	192,938	359,757	358,820	193,875
August, 1923	..	183,798	408,417	398,685	193,530

Percentage Changes in Production and Shipments of Identical Mills in September, 1923, as Compared With August, 1923

	Production	Shipments
News print	—14%	—11%
Book	—15%	—14%
Paperboard	—15%	—14%
Boxboard	—19%	—17%
Wrapping	—4%	—1%
Bag	—14%	—1%
Fine	+3%	—1%
Tissue	—3%	—7%
Hanging	+4%	+16%
Felts and building	—15%	—12%
Other grades	—12%	—6%
Total—all grades	—12%	—10%

The American Paper and Pulp Association in co-operation with the U. S. Pulp Producers' Association submit herewith statistics on pulp production, consumption and stocks for the month of September, 1923, and previous months.

Pulp Production

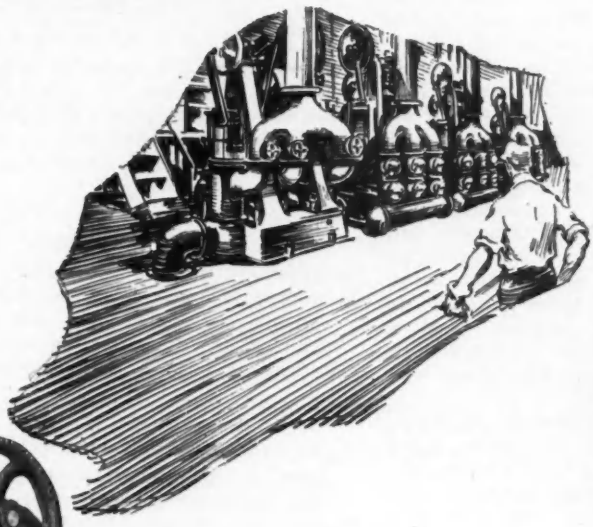
The statistical table following gives the number of mills reporting stocks as of the first of the month and end of the month, production during month, amounts used by mills producing same with amounts shipped to concerns other than those producing same.

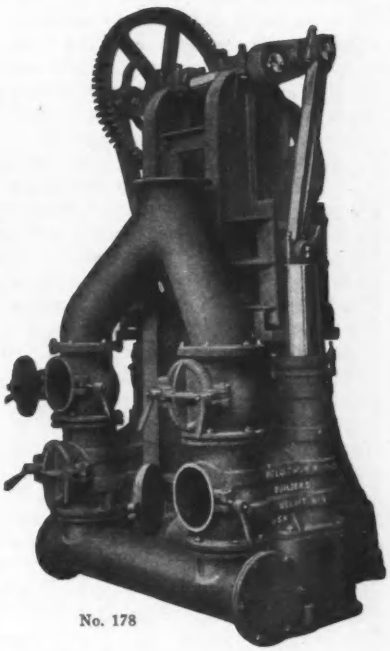
Grade	Number of mills	On hand first of month	Production for month	Used during month	Shipped during month	On hand end of month
Ground Wood Pulp:						
September, 1923	103	79,633	60,777	71,893	4,677	63,840
August, 1923	106	103,297	66,919	85,708	7,145	77,363
July, 1923	113	116,277	80,721	87,589	4,211	105,198
June, 1923	102	85,810	100,760	85,103	4,759	96,708

(*Continued on page 34*)

BELOIT IRON WORKS PAPER MACH'Y BELOIT WIS

The Efficiency Pump for Paper Mills





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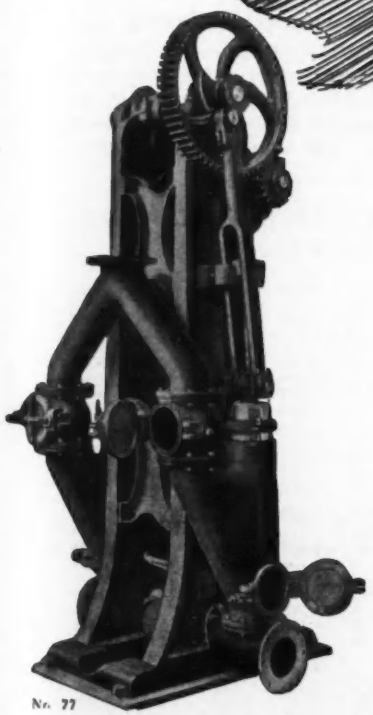

No. 77

BELOIT pumps are called "heavy duty" pumps because they are sturdy and strong. They are built for continuous 24-hour service and are gluttons for hard, steady work. They are regarded as the present-day *efficiency* pump for paper mills.

On our triplex pumps you will find forged steel crank shafts instead of cast steel. Our locomotive type connecting rod (regular equipment on our heavy-duty pumps) takes up the wear on crank and wrist pins while pump is in operation. The self-aligning feature prevents undue strain on cranks or frames.

If ever a part does become broken or worn out after years of hard usage, their construction is so handy that the repair can be effected easily and quickly, without the necessity of buying a considerable portion of a new pump.

Thousands of experienced board makers the world over know that Beloit pumps "deliver the goods."

It will pay you to turn first to BELOIT.

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Obituary

Frank H. Anson

MONTREAL, Que., November 5, 1923.—Frank H. Anson, president of the Abitibi Power and Paper Company, died at the Montreal General Hospital on November 1, following an operation. He leaves a widow, who was Anna MacAvoy, Buckingham, W. Va., and several children.

Mr. Anson, was born at Niles, Mich., the son of Austin Anson. After an education at Niles, he entered into business life in Minneapolis, then came to Canada, made Montreal his home, and became a naturalized British subject. He quickly showed that he had executive ability, as for many years he was with the Ogilvie Milling Company. He was manager of the foreign department of that company, and in 1904 was named general superintendent. After leaving the Ogilvie Company he became interested with D. Lorne McGibbon, in the promotion of the Atlantic Sugar Refineries, Ltd., and had charge of the construction and operation of the refinery at St. John, N. B., for some years. He was also vice-president of the company.

In order to give his whole time to the development of the pulp and paper industry in northern Ontario, he retired from the sugar business and built up the Abitibi Power and Paper Company, Ltd., which may be said to have been his life's most important work. From the time he started on this enterprise, until his death, he untiringly devoted to the company all his great energy and ability and had the satisfaction of seeing his hopes of establishing one of the largest paper mills in Canada realized. He was regarded, not only in this country, but also in the United States, as one of the dominating figures in the industry.

On the social side, Mr. Anson was of a reserved and retiring disposition, but had many devoted friends. He was an ardent golfer and belonged to the Royal Montreal and Mount Bruno clubs, the Forest and Stream, the Laurentian, Montreal Jockey Club, St. Lawrence Yacht Club and the St. James Club. Mr. Anson, as a motorist, was an enthusiastic advocate of good roads. His activities in this direction brought him the honor of being chosen, in 1910, president of the Automobile Club of Canada. He was also a president of the Auto and Aero Club. Mr. Anson was in his early sixties.

William F. Wendt

BUFFALO, N. Y., November 6, 1923.—William F. Wendt, founder and former president of the Buffalo Forge Company, died at his home in this city last week. He was a brother of Henry Wendt, now president of the Buffalo Forge Company. The deceased was born in Buffalo. He was also president of the George L. Squier Manufacturing Company, Buffalo Steam Pump Company and W. F. Wendt Publishing Company.

W. Chapman Brown

SPRINGFIELD, Mass., October 30, 1923.—W. Chapman Brown, aged 55, superintendent of the wire weaving department of Cheney Bigelow Wire Works, died Sunday at his home, 35 Amherst street. He was born in South Orange, N. J., in 1868. He was associated with his father in the firm of Brown and Sellers, wire weavers. In 1916 he took a position with the Cheney Bigelow people. Besides his wife, he leaves two sons, Ralph C. and Donald F. The funeral was held Monday afternoon with burial in Forestdale cemetery, Holyoke.

Edward A. Jones

BOSTON, November 5, 1923.—Edward A. Jones, well-known publisher of this city, died recently at his residence in Arlington, Mass., following a long illness. The deceased was born in Weston, Mass., February 14, 1847. Mr. Jones was treasurer of the Union Publishing Company of this city which published directories for numerous cities and towns. He also was the publisher of the Blue Books.

Howard B. Wadsworth

Harold B. Wadsworth, well known in the paper industry, died last Saturday in Willard Parker Hospital. He was a grandson of Hiram Cronk, oldest survivor of the war of 1812, who died in 1905. Mr. Wadsworth had just returned from a trip to Japan, where he had been for several months. He was there at the time of the earthquake although not in the danger zone.

He had many paper connections in Japan and was extremely popular among other members of the industry in this country. He had been in the paper business since he was a boy gradually assuming more and more responsible positions until finally his business reached a large scale. He was forty-six years old.

Acquires Mill at Anacortes, Wash.

TACOMA, Wash., November 6, 1923.—The Consolidated Paper Corporation of this city has acquired a mill in Anacortes, Wash., which was formerly used for the manufacture of cement and will remodel and improve the property for the production of waterproof and other paper products. Considerable new machinery will be installed.

Organize Study Classes

CUMBERLAND MILLS, Me., November 6, 1923.—Study classes have been organized among the employees of S. D. Warren Company. Twenty men have enrolled. They will take up, this year, the subjects covered by Volume II of the textbooks. While most of the study is done at home, the classes meet for an hour and a half each week.

They Bar German Banknotes

GENEVA, November 1, 1923.—Fifteen tons of German banknotes of small denominations, purchased by a Zurich paper factory for conversion into paper pulp, have been refused entrance by the customs office under the Swiss law prohibiting the importation of large sums of foreign currency. The paper factory must stand the loss.

SEPTEMBER PAPER PRODUCTION

(*Continued from page 32*)

Sulphite, News Grade:						
September, 1923	39	15,800	37,573	35,226	3,336	14,811
August, 1923	42	21,091	47,482	45,059	5,578	17,936
July, 1923	38	15,505	37,224	36,100	2,817	13,812
June, 1923	39	13,780	44,098	44,684	2,216	10,978
Sulphite, Bleached:						
September, 1923	20	5,529	16,845	13,891	3,743	4,740
August, 1923	20	5,294	19,179	14,829	4,140	5,504
July, 1923	16	1,211	11,407	8,864	2,389	1,365
June, 1923	13	2,573	13,497	11,372	1,674	3,024
Sulphite, Easy Bleaching:						
September, 1923	7	853	6,532	5,572	933	880
August, 1923	9	1,183	7,057	6,501	695	1,044
July, 1923	9	1,699	5,458	5,078	501	1,578
June, 1923	5	1,070	4,100	4,132	145	893
Sulphite, Mitscherlich:						
September, 1923	6	2,494	5,030	4,376	782	2,366
August, 1923	5	1,143	4,915	3,421	863	1,774
July, 1923	6	1,875	5,462	4,202	1,179	1,956
June, 1923	6	1,156	5,857	4,572	840	1,601
Sulphate, Pulp:						
September, 1923	12	7,055	10,739	9,039	1,915	6,840
August, 1923	14	8,266	14,527	10,239	1,877	10,677
July, 1923	13	4,365	13,150	9,472	3,576	4,467
June, 1923	14	5,925	17,662	11,126	4,203	8,258
Soda Pulp:						
September, 1923	12	5,816	12,309	7,789	5,643	4,693
August, 1923	11	1,317	11,946	8,140	3,399	1,724
July, 1923	11	5,761	8,588	3,890	4,678	5,781
June, 1923	9	6,567	7,291	3,998	4,110	5,750
Other Than Wood Pulp:						
September, 1923	3	178	194	.....	133	239
August, 1923	3	152	270	107	135	180
July, 1923	3	70	236	.....	156	150
June, 1923	3	183	217	168	162	70
Total—All Grades:						
September, 1923	..	117,358	149,999	147,786	21,162	98,409
August, 1923	..	141,743	172,295	174,004	23,832	116,202
July, 1923	..	146,763	162,246	155,195	19,507	134,307
June, 1923	..	117,064	193,482	165,155	18,109	127,282

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Editorial

Vol. LXXVII New York, November 8, 1923 No. 19

HENRY J. BERGER, Editor

THE BUSINESS SITUATION

As the paper industry enters further into the fall period it becomes increasingly evident that there is something wrong. The expected recovery after an unusually dull summer is far behind what had been confidently predicted by authorities in the trade. Jobbers in most of the lines are reporting that they have more uncalled for goods on their shelves than they did at this time last year.

Paper is not alone in its failure to rally. Throughout industry all over the country people are beginning to rub their eyes and ask where all the buyers have disappeared. In the textile industry many mills are closed or running on part time because they claim that their production costs have risen to a point where the public cannot be expected to take up their goods.

It will do the paper manufacturer no good to poke his head in the sand and cackle that business is good. Business is not good—optimistic reports of trade organizations to the contrary. In general it is pretty bad and salesmen are having to hustle to get orders.

The extreme optimist will point to the behavior of the stock market as sure proof of better times in the near future. He will say that surely there could not have been such great activity in industrials unless there were some real basis for it. The United States Steel Company would never have declared an extra dividend if it had not been prospering. Jesse Livermore, a large operator and a well known bear, would never have issued such a bullish statement had he not been confident.

As a matter of fact the stock market seems to have been the subject of a good deal of shrewd manipulation during the past ten days. No close student of the general business situation would subscribe to the idea that there was any real economic reason for the movement of industrials that had been dormant for months.

What then was back of the whole thing? That, of course, is a matter for conjecture, but in the past it has been evident that before a large firm of bankers floated a tremendous bond issue there was always a strong bull market. Such an issue, in public utility bonds amounting to scores of millions, was brought out the first of the week at the peak of heavy buying and, of course, was immediately oversubscribed. The chances are that the stock market will fall back to its former position now.

Behind the whole situation lie two things: politics and labor. It takes a long time to throw such a mighty and smooth machine as American business out of gear. An unhealthy situation does not seem to affect it at first, but gradually the malignant growth spreads until a painful operation is necessary to remove it. Is the industry of the country on the eve of such an experience?

For several years economists have been pointing out that the tax system was dangerous. The surtax on industry and tax exemption for government bonds was bound to strike a serious blow at business, they told us. They also said that labor could not expect to keep wages up to the peak of the war time prosperity. But we branded them as Cassandras, shouted that the war was over, that the two years following it marked the readjustment period and that at last the prodigal had returned and that it was time to kill the fatted calf. Let us be sure that the calf does not turn out to be the goose that laid the golden egg.

At the present time the people are luxuriously spending billions a year in the process of governing themselves. In order to get these vast sums it is necessary to draw money away from industry, on which our whole system is rooted and this is done by preferential taxing. The man with money to invest is invited to lie secure behind the law with his tax exempt securities and watch the interesting spectacle of business struggling for its existence. Let him beware. The fighters may jump out of the arena and slaughter him.

We hear a great deal from the farmers. They say that they sell their raw material for so little that they make no profit and buy it back in the finished article at an exorbitant price. They want the government to do something terrible to the dreadful capitalists that are exploiting them. The real trouble is that the difference between what they sell for and what they have to pay represents increased production costs, ninety per cent of which is due to labor. This is true in all industries.

The International situation is played up as the principal disturber of business to divert attention from the real internal problems. This is a part of the political game. The truth of the matter is that the nations of the world are working toward a settlement of their problems. They are not going to fight again. Rumors of the disintegration of Germany are somewhat discounted by the fact that during the eight months ending in August she was our best customer for cotton, copper and meat for which cash was paid.

THE PAPER TRADE JOURNAL humbly suggests that a more searching look into our domestic affairs and a more unselfish attitude on the part of our legislators would do much to lift business out of the rut into which it has fallen.

SHUTTING OUT CHRISTMAS TREES

Because of the prevalence of gypsy moth infestations in every part of Maine, the states of New York and Pennsylvania will exclude Christmas trees from that section, according to information received by the State of Maine Department of Agriculture. The department has taken the matter up with the proper officials at Harrisburg and Albany, protesting against the quarantine and urging that the ban be lifted from trees from certain sections which, it is said, are free from the moth.

The reply received from both states is decidedly unfavorable and indicates that absolutely no trees will be received from any points in New England. Several reasons are given for this action by the officials.

It is claimed that scattered gypsy moth infestations are found in practically every part of Maine and Christmas tree producing areas are too large to admit of efficient scouting. The officials also rejected the suggestion that trees be inspected at the point of shipment or at the time of cutting on the ground that no such inspection could be made thorough enough to dispel the fears of those in

charge of plant protection in the other states. It is said that the states of New Jersey, Maryland and Ohio have or are about to adopt similar restrictions so that the New England Christmas tree industry promises to have a lean Christmas this year.

VALUE OF PHYSICAL EXAMINATIONS

(*Continued from page* 24)

Applicants are examined by our part-time plant physician, who calls for about an hour at the plant each day.

The examination covers the following points:—

Sex, color, whether married or single, age, weight, height, eyes, ears, nose, throat, teeth, gums, temperature, and pulse, arteries, blood pressure, heart, lungs, abdomen, extremities, reflexes, urinalysis and G. U.

Up to July 1, 1923, a total of 547 applicants were examined,—with corrective treatments prescribed in 154 cases.

It is interesting to note that 55 hernia cases were discovered: 36 being first degree, 7 second degree, and 12 third degree. In all cases of hernia the applicant has been advised as to having an operation or procuring a properly adjusted truss. If the cases are at all advanced the employee is not allowed to work until he has procured some corrective treatment.

Thirty-two applicants were found to have venereal disease and all such cases were immediately turned over to the local public clinic.

Thirteen cases of suspicious tuberculosis were discovered and all such cases have been closely followed up, with the temperature taken each afternoon and the best possible advice given for control of the trouble.

All cases where a urinalysis has shown the presence of albumen or sugar, have been closely followed up. Among these cases were 29 pronounced diabetics.

Eyes and Ears Looked After

Through examination of the ears, 27 cases of impacted wax were found, some of them quite interesting. One applicant had been almost deaf for twelve years, but after the removal of the wax, could hear perfectly.

Cases of defective eyes are followed up to arrange for corrective treatments.

In the nose examinations a large percentage of deviated septums and enlarged turbinates have been advised to see a specialist.

All those with defective tonsils are advised as to the danger of heart infection, rheumatism, etc.

We do not employ a plant dentist but in the examination of the teeth a large field for preventive work has been shown. Much Riggs disease has been found, turned over to the family dentist and followed up.

Wherever a high rate in blood pressure has been noted the applicant is advised as to treatment, and the case is reported to the family physician.

Many interesting cases have been found but it is only such cases as refuse to have proper treatment that are definitely turned down.

One man refused to get a truss for a second degree hernia and was consequently not allowed to go to work.

One potential apoplectic was advised as to his condition, and was persuaded to look elsewhere for easy work.

Many times it has been fairly demonstrated that the healthiest looking individuals may have serious complications.

In one case a perfectly normal appearing man of good weight and stature was discovered to be such a serious diabetic that after a conference with his family physician, he was advised to take much lighter work than he had been in the habit of doing.

Applicant was Unfitted

A very recent case was that of a well appearing young man, above the average in intelligence, who was welcomed with open arms by the employment office and by the foreman who had a vacancy, only to discover through the physical examination, that he had a serious spinal curvature, strong indications of tubercular trouble, a tendency toward diabetes, and had undergone a serious operation, which together with the other indications absolutely unfitted him for anything like the work he was contemplating.

This brief recital of the results of our examinations will serve, I am sure, to demonstrate fully that the physical examination is of very definite value to the applicant himself. We have satisfied ourselves that there is a large enough percentage of serious accident and health risks among applicants, to make the examination very much worth while, from the viewpoint of the company.

Simply a Selective Process

Our experience has demonstrated that successful conduct of physical examinations does not mean the exclusion of a large number of unfit applicants. It is rather a selective process whereby the applicants are placed on the work best fitted to their physical capabilities and limitations. The facts of the case are that we have refused employment to only two of the 547 examined,—one, a case of advanced diabetes, the other, a potential apoplectic, who has since died. In both cases we apparently satisfied the rejected applicants that it would be unwise for them to accept the work they desired on account of the direct hazard to themselves.

British Trade Optimistic

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., November 7, 1923.—The British paper market has adopted an optimistic view in regard to the future outlook, but—states the *Times Trade Supplement*—there is little solid ground on which to base this optimism. At the moment the home demand is poor and the most recent official trade returns are far from encouraging. Apart from the newspapers, which steadily maintain their consumption and keep the news print mills fully occupied, the home requirements of manufactured paper is very unsatisfactory. It is usual, however, for the manufactured demand to improve in September. It is pointed out that under existing conditions German competition in wood pulp and paper has upset relative values. Unable to sell within their own borders, German pulp and paper makers are depending almost entirely upon export trade to keep them going. Sweden and Norway complain of the abnormally low quotations issued by German wood pulp mills, and news print is quoted delivered free in English ports at lower prices than own mills can afford to accept. German wrapping prices have had a disastrous effect upon British business in this line.

But for the recovery of the export trade, the paper making industry of Great Britain would have dwindled to very small dimensions. The average monthly export of paper and boards in 1921 was 122,000 hundredweight (hundredweight = 112 pounds) in 1922 it reached 205,000 hundredweight, and for the first eight months of the current year approximately 325,000 hundredweight. Unfortunately there has been a steady decline in the export trade since May last when the figures recorded were 354,305 hundredweight. August figures, which are the latest available, having fallen to 237,886 hundredweight. On the other hand, British paper imports have continued to increase since the commencement of the year, and Germany stands out as responsible for this increase, especially in wrapping papers.

It is claimed in the trade that the outlook has considerably improved of late. For one thing, wood pulp has eased in price during recent weeks, and the makers claim that a stable level has been reached. Strong news sulphite has fallen 15 shillings and mechanical wood pulp since June, present quotations being £15 and £10 10s respectively. There has been a greater decrease in easy bleaching sulphite which is quoted at £10, a decrease of £7 5s under June prices. At the moment negotiations are in progress with regard to papermakers' wages, and a favorable outcome is anticipated.

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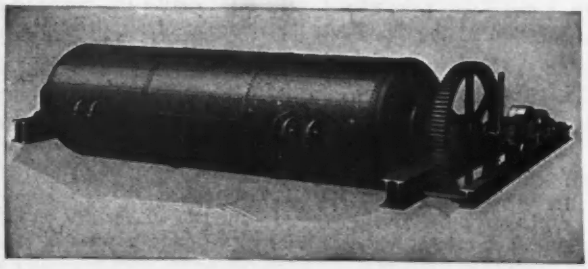

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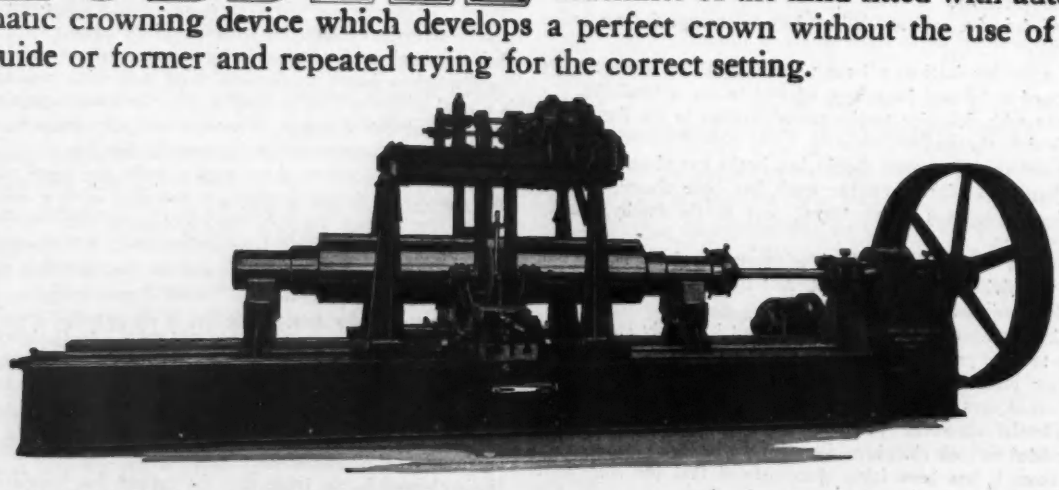

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AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G. MacNAUGHTON, Secretary

INDUSTRIAL DRYING—HOW THE APPARATUS WORKS*

By Lucien Buck, Manager Industrial Drying Department B. F. Sturtevant Co., Hyde Park, Boston, Mass.

The application of the science of drying is a highly specialized branch of engineering, and the drying of materials is a matter of vital importance and necessity in many of the present-day manufacturing processes. The drying operations may apply to raw materials or products in a preliminary, intermediate or final process, to a byproduct, or to the recovery of a waste product, and the performance of the drying equipment may be the keystone of success or the failure of what might be a profitable enterprise.

Until recent years most driers were built by "rule of thumb" rather than by analysis and pre-calculation, but due to the ever-increasing cost of production there is of necessity a greater demand for economical and efficient drying equipment and the day undoubtedly has passed when the apparatus can be selected and the volume of air determined by that "mysterious" absorption rate of so many grains of moisture lifted per cubic foot of air. It cannot be denied, however, that the "absorption" rate and the "air change" are useful factors for approximate estimating and rough checking when judiciously applied, but these should never be used as a basis of design, except possibly for dry loft ventilation.

That the design of driers and the science of drying has not made greater progress, or that better results have been obtained, is probably due, more than to any other cause, to the fact that most of the driers in general use in the various industries are of crude construction, which have been undertaken by chemists, engineers, superintendents or foremen, where few if any of them had the necessary experience or education to undertake the design of such driers. It is true that in some cases the proper combinations have been arrived at or expensive changes made which produced satisfactory results, but in general such driers are usually makeshifts and inefficient.

A successful drying installation cannot be made by the haphazard assembling of different apparatus to resemble a type of drier. To be economical, efficient and sure, a drying system must be the product of practically applied drying science, the result of a careful study of the requirements of production and working conditions in the plant, combined with a knowledge of the chemical and physical characteristics of the material to be dried and what may be expected of a particular type of drier.

The principles of drying are based on well-known physical laws, but the practical application of those laws are complicated. After judiciously directed tests and mathematical calculations from known factors and conditions, it is possible to reach a theoretical conclusion in advance of the actual phenomena; but without practical experience in the application of theoretical calculations, it will be difficult, if not impossible, to produce commercially successful results, and this latter statement will be borne out by manufacturers, industrial chemists and specialists in the various branches of engineering.

* (From Chemical and Metallurgical Engineering.)

What Drying Is

Drying consists of removing or eliminating the moisture from any solid matter by vaporization, and is also generally understood to apply to the evaporation of solvents. An interchange of heat is a necessary step in most chemical reactions. To maintain vaporization the heat required must be continually supplied, and in addition, the equilibrium between the vapor pressure of the liquid in the material and the vapor pressure in the surrounding media must be continually destroyed.

For many materials, drying by means of air is to be preferred, although air in itself does no drying; it is a most convenient vehicle for conveying heat directly to the particles of the wet material, it serves as a carrier for the removal of moisture and its temperature is susceptible to accurate control.

Heat is a form of energy which can be transferred from one body to another and while generated in one body may heat or cause molecular motion in one or more other bodies. Heat is transmitted by *convection* when the energy is carried to the new location by currents of the heated fluid or gas, by *conduction* when the energy passes on from one adjacent layer to another without appreciable displacement of the particles of the body, and by *radiation* when the energy is transferred as an ether vibration to some other body which may absorb it without heating the medium through which it passes. *Sensible heat* is a degree of heat which is sensible to and can be measured by a thermometer. *Latent heat* is the amount of heat absorbed or rendered latent by a liquid during vaporization, and which is not sensible to the thermometer, but which varies with the temperature at which evaporation is effected.

Air may be heated by steam coils, indirect hot air furnaces or direct-fired heaters, and in such cases the heat is transferred to the wet material by convection. The amount of heat emitted to the air in passing through the heaters depends on the difference in temperature between the air and the hot surface, the area of the exposed surface, the velocity of the air through the free area of the heater, the arrangement of the heating surface and the material from which constructed.

It is a well-known fact that most liquids, if left exposed to the air in an open vessel, even at ordinary temperatures, will gradually disappear by evaporation.

By referring to published steam tables it will be observed that the pressure of the vapor in a space saturated with water vapor increases rapidly with the increase of temperature and also that the density of a cubic foot of saturated water vapor is a definite quantity dependent entirely upon its temperature.

According to the laws of Dalton, in any mechanical mixture of gases each gas has a partial pressure of its own which is entirely independent of the partial pressures of the other gases. At any given temperature a liquid has a definite tendency to pass into the vapor state producing a definite pressure. The amount of pressure will vary with the nature of the liquid and will be the greater the more volatile it is.

What Makes Drying Possible

For every temperature there is a corresponding partial pressure of water vapor at which the vapor is in a saturated state, its condition then being exactly similar to that of saturated steam. When water vapor is in a saturated condition the air is considered as being saturated, since it then contains the maximum weight of vapor that can be held at that temperature. If the temperature of the air is higher than that corresponding to the partial pressure of the water vapor, the vapor is superheated; if the temperature drops below the saturation point, some of the vapor is condensed and the vapor pressure is lowered to that corresponding to the new temperature. As the partial pressure of the saturated vapors increases as the temperature increases, it holds that the air at higher temperatures is capable of holding a greater weight of water per cubic foot. Water vapor exists independently of the air except for the heat effect of the latter to produce a purely gaseous mixture, the water vapor occupying exactly the same space as though no air was present. Under a constant barometric pressure, however, the mixture will occupy a slightly greater space than before.

Relative humidity is the ratio of the actual vapor pressure present in a given space to the vapor pressure when the space is saturated with vapor at the given temperature, or it may also be expressed as the percentage of maximum saturation at the given temperature.

Atmospheric air always contains more or less moisture or vapor in suspension. It is never dry and rarely saturated and the amount so carried depends largely on weather conditions. When dealing with atmospheric air it should be remembered that saturated water vapor, strictly speaking, is nothing other than steam at very low pressures, and atmospheric air may be considered as superheated steam, but at atmospheric pressure. The properties of atmospheric air are similar to those of steam, as will be noted by reference to the accompanying air table. (Table I.)

The total or atmospheric pressure is made up of the combined pressure of all the gases present, but if the total pressure is all produced by the water vapor and there is no air present, the pressure of the vapor in the inclosed space is in equilibrium with the pressure of the water in the material, and no further vaporization will occur. If some of the vapor is removed or some air is introduced and the total pressure remains the same, the partial pressure will be lowered, as there is less vapor present, since the air is producing part of the pressure, and vaporization will be resumed and continued until equilibrium is again reached.

When air below saturation is brought into intimate contact with water, there is always a tendency for some of the water to vaporize, adding to the moisture content of the air. If no heat is added from an outside source and none is removed, the heat of vaporization of the moisture which is added will be supplied entirely from the heat of the air and the superheat of the original quantity of vapor. The final temperature which is reached by a process of this nature taking place without a transfer of heat to or from an outside source is the temperature of adiabatic saturation or 'saturation point,' and its depression below the original temperature of the air will depend upon the amount of moisture which was added to bring the air to saturation. Any further drop in temperature will cause the moisture or vapor to be visible as fog, mist or dew, and the temperature at

TABLE I—PROPERTIES OF AIR

Deg. F. Temp.	Cu. ft per lb. dry air	Weight in lb. per cu. ft. Dry air	Dry air in sat. mixt.	Sat. mixture	Barometer, 29.92 in. Weight of vapor for saturation: Per cu. ft., pounds	dry air grains	per lb. dry air ib.	per lb. dry air grains	Pressure-in.-hg. sat. vapor	dry air (partial)	Latent heat of evap. at wet bulb temp.
32	12.39	0.0807	0.0802	0.0805	0.000303	2.12	0.00378	26.47	0.1804	29.74	1073.4
35	12.47	0.0802	0.0796	0.0799	0.000340	2.38	0.00427	29.88	0.2034	29.717	1071.7
40	12.59	0.0794	0.0787	0.0791	0.000410	2.87	0.00520	36.41	0.2471	29.672	1068.9
45	12.72	0.0786	0.0778	0.0783	0.000492	3.44	0.00632	44.21	0.3002	29.620	1066.1
50	12.84	0.0779	0.0769	0.0775	0.000588	4.11	0.00764	53.47	0.3625	29.558	1063.3
55	12.97	0.0771	0.0760	0.0767	0.000699	4.90	0.00920	64.43	0.4357	29.484	1060.6
60	13.10	0.0763	0.0750	0.0758	0.000829	5.80	0.01105	77.3	0.522	29.398	1058.8
65	13.22	0.0756	0.0740	0.0750	0.000979	6.86	0.01323	92.6	0.622	29.298	1055.0
70	13.35	0.0749	0.0730	0.0742	0.00115	8.07	0.01578	111.5	0.739	29.181	1052.3
75	13.48	0.0742	0.0720	0.0734	0.00135	9.46	0.01877	131.4	0.873	29.047	1049.5
80	13.60	0.0735	0.0710	0.0726	0.00158	11.06	0.02226	155.8	1.029	28.891	1046.7
85	13.75	0.0728	0.0699	0.0717	0.00184	12.89	0.02634	184.4	1.209	28.711	1044.0
90	13.86	0.0723	0.0687	0.0708	0.00214	14.96	0.03109	217.6	1.417	28.503	1041.2
95	13.98	0.0715	0.0676	0.0701	0.00247	17.32	0.03662	256.3	1.655	28.265	1038.4
100	14.11	0.0709	0.0663	0.0692	0.00286	19.98	0.04305	301.3	1.926	27.994	1035.6
105	14.24	0.0702	0.0650	0.0683	0.00329	22.99	0.0505	354.0	2.236	27.684	1032.8
110	14.36	0.0696	0.0636	0.0674	0.00377	26.38	0.0593	415.0	2.589	27.331	1030.0
115	14.49	0.0690	0.0621	0.0664	0.00431	31.80	0.0694	486.0	2.987	26.933	1027.2
120	14.62	0.0684	0.0605	0.0654	0.00492	34.44	0.0813	569.0	3.438	26.482	1024.4
125	14.75	0.0678	0.0588	0.0644	0.00560	39.19	0.0953	667.0	3.948	25.972	1021.6
130	14.88	0.0672	0.0570	0.0634	0.00636	44.49	0.1114	780.0	4.52	25.40	1018.8
135	15.00	0.0667	0.0551	0.0623	0.00720	50.38	0.1305	913.0	5.16	24.76	1016.0
140	15.13	0.0661	0.0530	0.0611	0.00813	56.91	0.1532	1072.0	5.88	24.04	1013.1
145	15.26	0.0655	0.0510	0.0602	0.00916	64.1	0.1800	1260.0	6.67	23.25	1010.3
150	15.39	0.0650	0.0485	0.0588	0.0103	72.1	0.2122	1485.0	7.57	22.35	1007.4
155	15.52	0.0644	0.0460	0.0576	0.0116	80.9	0.2511	1758.0	8.55	21.37	1004.5
160	15.64	0.0639	0.0433	0.0562	0.0129	90.6	0.2987	2091.0	9.65	20.27	1001.6
165	15.77	0.0634	0.0404	0.0549	0.0145	101.1	0.3577	2504.0	10.86	19.06	998.7
170	15.90	0.0629	0.0372	0.0533	0.0161	112.8	0.4324	3029.0	12.20	17.72	995.8
175	16.03	0.0624	0.0339	0.0517	0.0179	125.5	0.5290	3703.0	13.67	16.25	992.9
180	16.16	0.0619	0.0303	0.0502	0.0199	139.4	0.6570	4599.0	15.29	14.63	989.9
185	16.28	0.0614	0.0264	0.0485	0.0221	154.4	0.8359	5851.0	17.07	12.85	986.9
190	16.41	0.0609	0.0222	0.0466	0.0244	170.9	1.0985	7690.0	19.02	10.92	983.9
195	16.54	0.0605	0.0178	0.0448	0.0270	189.0	1.521	10647.0	21.15	8.77	980.9
200	16.67	0.0600	0.0129	0.0426	0.0297	208.0	2.2953	16067.0	23.47	6.45	977.8
205	16.77	0.0596	0.0078	0.0406	0.0328	229.0	4.187	.....	26.00	3.92	974.7
210	16.85	0.0593	0.0023	0.0383	0.0360	252.0	15.74	.....	28.76	1.16	971.6
212	16.90	0.0592	0	0.0373	0.0374	262.0	.....	.....	29.92	0	970.4
220	17.10	0.0588	.....	.....	.....	.....	.....	.....	.....	.....	.....
230	17.35	0.0576	.....	.....	.....	.....	.....	.....	.....	.....	.....

HEAT TO ADD FOR SUPERHEATING

Degree of superheat...	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°	110°	120°	130°	140°	150°	160°	170
B.t.u.	4.7	9.4	14.1	18.8	23.5	28.2	32.8	37.6	42.2	47.7	51.6	56.2	60.9	65.6	70.3	74.9	79.

TECHNICAL SECTION, PAGE 173

which the moisture will condense out of the air called its 'dew-point.'

By means of a psychrometer or hygrometer, simultaneous readings of two thermometers may be taken, the bulb of one thermometer being covered with a film of water through a covering of wet fabric. The temperature indicated by the wet bulb thermometer is the temperature of evaporation and is usually called the wet bulb temperature. The dry bulb temperature indicates the temperature of the superheated vapor mixture, the difference between the two readings being the temperature head available for evaporation, and is usually called the wet bulb depression. In completely saturated air, there would be no wet bulb depression and the readings on the two thermometers would be alike. The *wet bulb temperature* is the temperature produced by adding moisture to the air and causing its temperature to drop by reason of giving up heat to vaporize the water, while the *dew-point* is the temperature reached by removing heat from the air without changing its moisture content. The temperature of the dew-point may be determined by calculating the actual vapor pressure in the air from the wet and dry bulb readings and then finding the temperature corresponding to that vapor pressure by reference to tables of saturated vapor pressures or by calculation. It is evident, therefore, that the rate of evaporation of free moisture from a surface is dependent upon the difference between the vapor pressure of the liquid and its partial pressure in the surrounding space.

The effect of temperature alone on the rate of evaporation is shown by the drying curves in Fig. 1.

Where Empirical Methods Are Used

From the foregoing it will be understood that the thermal process of a drying operation is capable of exact theoretical analysis, but the subsequent processes cannot well be worked out theoretically; they must be studied experimentally. The physical properties and characteristics of the various materials complicate the drying operation and the evaporation of a liquid from the surface of a solid is a complex process.

When water is admixed with other materials, the position and form of the mixture modify the rate of evaporation.

The liquid which is on the surface of the material will be readily evaporated, but that moisture which is in the interior must diffuse to the surface before evaporation can occur, and this rate of diffusion will vary with the nature of the material. In some cases the controlling factor in drying is the rate of surface evaporation, while in others the rate of diffusion of the water from the interior to the surface limits the rate of evaporation.

When air is present with the superheated water vapor, the vaporization of a particle from the surface of the free water is retarded by the air pressure, or rather the layer of air in immediate contact with the moisture on the surface of the material which diffuses from the interior has become saturated and has a higher vapor pressure corresponding to the temperature of the surface of the water, and the air retards the diffusion of this vapor.

It is apparent, therefore, that the more rapidly this saturated film is removed the faster will be the rate of evaporation, so that diffusion of the vapor at the wetted surface varies with the velocity of the air across that surface and this will also be affected by the direction of the air currents.

If the temperature and air velocity are both increased, the relative rate of evaporation will be correspondingly increased up to the limit of the drying speed of the material, as shown by the drying curves in Fig. 2.

There is a certain limit to the speed of drying various materials which in every case must be determined either by experiment or as a result of experience, and this speed cannot be exceeded without doing injury to the structure of most materials, such as checking, cracking, curling, discoloration, warping, shrinkage, honeycombing, etc.

There is no question that a sheet of blotting paper will give up moisture more rapidly than a soft mud brick, and so it is that each material or group of materials of the same general characteristics have a certain maximum rate at which they will give up their moisture under various conditions of temperature and humidity without injurious effect.

Some Points for Designers

In the design of drying equipment and process, due consideration must be given to the hygroscopic properties of the materials to be dried, as this is an important factor in determining the percentage of saturation of the air exhausted from the drying chamber. Most materials retain moisture in equilibrium under ordinary atmospheric conditions, but the amount retained varies widely for different materials and is a definite function of temperature and humidity, as the vapor pressure of the moisture in the material and the moisture in the air must be equal in order to be in equilibrium. [See Robert E. Wilson and Taylor Fuwa, *J. Ind. Eng. Chem.*, vol. 10 (1922), p. 913.] The hygroscopic moisture in a material, which corresponds to equilibrium with the tir surrounding it, is termed 'the equilibrium moisture' or 'regain.'

It is generally true that as much water as possible should be removed by a mechanical process by settling or drainage, the use of squeeze rolls, filter presses or centrifugal extractors, as usually greater economy can be effected in removing the excess moisture mechanically than by evaporation.

Before making any determination of the volume of air and quantity of heat needed under drying conditions, it is necessary to know the amount of moisture that must be evaporated in some given length of time. The amount of moisture in a material may be stated as a percentage of its original wet weight, or as a percentage of its bone-dry weight. As the bone-dry weight is a definite and unchangeable quantity, this basis of expressing moisture content is to be preferred to that of a percentage of its wet weight, which is a varying quantity due to the loss through evaporation.

Increasing the temperature of the air merely increases its moisture-carrying capacity but does not dry out the air, as is often

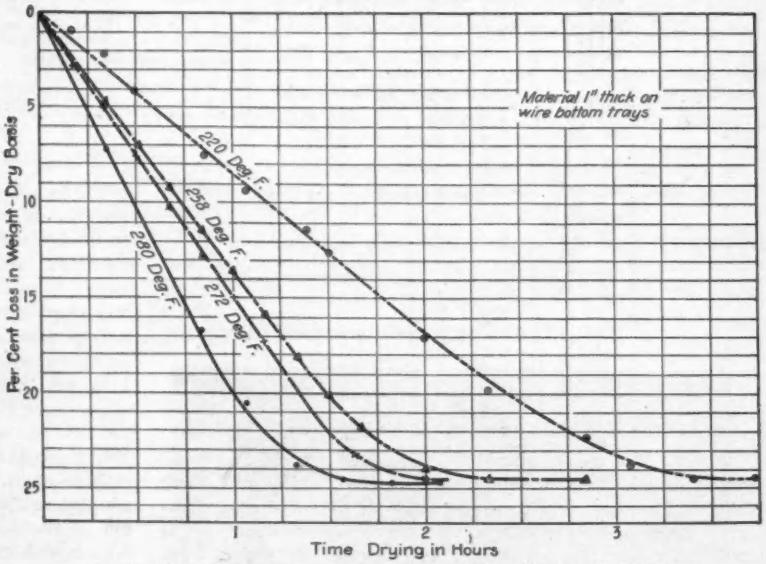

Fig. 1—Effect of Temperature on Drying Time With Constant Air Velocity

popularly supposed. If the air has been only heated and the temperature is reduced again, there will still remain the original quantity of moisture. Moisture can be removed from the air in only two ways—by absorption by chemicals, which is seldom used in commercial work, or by cooling to a temperature below which the excess moisture will be condensed out as is often noted by the dew on cold-water pipes during humid weather.

The drying of materials depends on the same laws as the evaporation of liquids, but demands special consideration from its very different conditions of temperature and supply of heat. It is important to remember that evaporation cannot go on unless the vapor pressure of the liquid to be evaporated is higher than that of the vapor in contact with it, and that the partial pressure of the air does not prevent evaporation, so that if the saturated vapors be carried away wih a continuous current of dry air, evaporation will continue.

One of the most important points in the design of drying apparatus and the control of drying operations is the provision for an adequate and uniform velocity of air past or through the material.

Controlling the Air Supply

Heated air passing over the moist surface drops in temperature toward the wet bulb temperature, inasmuch as the evaporation of water is accompanied by a definite absorption of heat. This heat supply must be maintained in order that evaporation may proceed and the temperature of the material will remain substantially constant at the wet bulb temperature so long as the moisture is evaporating freely, but as the last traces of moisture are being removed the temperature of the material will gradually rise, approaching the dry bulb temperature of the surrounding air, and they will correspond when the vapor pressure in the material is in equilibrium with the surrounding air.

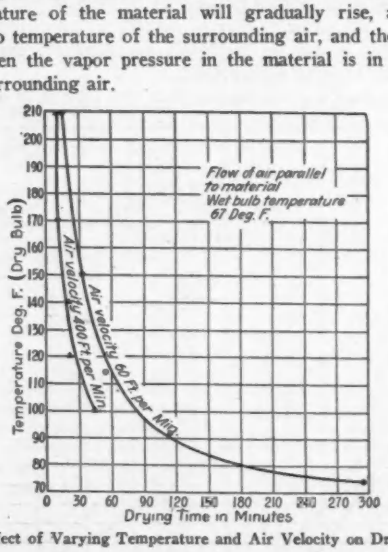

Fig. 2—Effect of Varying Temperature and Air Velocity on Drying Time.

In most cases the air should be recirculated or used over again until a certain point of saturation is reached, which varies with different materials. The partly saturated air should be continuously exhausted to the atmosphere in as near a saturated condition as commercial operation will permit and an equal amount of fresh air admitted to replace that exhausted. The exhaust air should never become completely saturated, as there would be danger of redepositing moisture on the material and, furthermore, the drying time would be increased to such an extent as to offset any economies due to saving in heat.

In making calculations as to heat requirements special attention must be given to the length of time which may be allowed for heating up the material and its moisture contents.

The heating period should not be taken as extending over the entire drying period.

The total heat necessary for evaporating moisture from the material is not the latent heat at the maintained dry bulb temperature within the drier, as is generally assumed, but it is the sum of the latent heat at the wet bulb temperature and the heat required to superheat the vapor to the dry bulb temperature.

Careful consideration must be given to the design and construction of the drier housing if a high thermal efficiency is to be obtained. In such articles as have appeared on the subject of drying, the construction of drier housings and the method of insulation has not been given sufficient consideration. There is an economic limit, of course, to the extent of insulation, and the construction details of the housing are in a measure determined by the type of drier, nature of the material being dried and the amount of moisture to be handled, and here again practical experience is of considerable importance.

Heat Lost Through Drier Housings

The extent of conducted heat lost through the drier walls is dependent upon the material of which the drier housing is constructed and the difference in temperature between the inside of the drier and the air in the room in which the drier is located. The heat loss through various types of drier housings is shown in Table 2.

TABLE 2—HEAT LOSS THROUGH DRIER HOUSINGS

(Courtesy of Johns-Manville, Inc.)

Type of Drier Housing	Loss
4-in. brick wall	0.77
4-in. concrete wall	0.86
⅞-in. T. & G. sheathing	0.73
⅞-in. T. & G. sheathing, sheet steel	0.72
Sheet steel, ¾-in. air cell, sheet steel	0.63
Sheet steel, 1-in. imp. asbestocel sheets, sheet steel	0.438
Sheet steel, 1½-in. imp. asbestocel sheets, sheet steel	0.316
Sheet steel, 2-in. imp. asbestocel sheets, sheet steel	0.247
¼-in. transite, 2-in. imp. asbestocel sheets, sheet steel	0.25
2-in. fine asbestocel sheets, refractory coated	0.268
⅞-in. T. & G. sheathing, builders' paper, 4-in. air space, builders' paper, ¼-in. transite, on 2 x 4 in. studs	0.41
Type A—Special Johns-Manville, builtup	0.13
Type B—Special Johns-Manville, builtup	0.20
Type C—Special Johns-Manville, panel const.	0.28

NOTE—The heat losses in B.t.u. per sq. ft. per hour per degree F. difference in temperature between inside and outside of drier.

HEAT LOSS THROUGH BARE FLAT IRON SURFACE

Temperature difference	B.t.u. loss/sq. ft./hr./ deg. temp. diff.
50°	1.950
100°	2.152
150°	2.400
200°	2.665

The manufacturers of insulating materials usually publish the efficiency of their various products, and these efficiencies are based on the loss through bare metal surfaces under the same temperature conditions. The losses through bare surfaces are very large and a seemingly small difference in the efficiency of the insulating material may represent a considerable difference in heat loss. For example, a temperature difference of 100°F. with a bare surface loss of 2.152 B.t.u., and comparing the efficiency of a certain type of insulation, 1 in. and 2 in. in thickness: With 2 in. of insulation, having an efficiency of 89.03 per cent, there is a loss of 10.97 per cent and the total loss per square foot per hour would be 2.152 × 0.1097 × 100° F., or 22.9 B.t.u. With 1 in. of insulation, having an efficiency of 80.45, there is a loss of 19.55 per cent. This difference of 8.58 per cent in the efficiencies of the insulation is not a true comparison of its value, but rather the loss with the 1 in. thickness is 8.58 divided by 10.97, or 78.2 per cent greater than through the 2-in. thickness.

Again comparing the insulation of a metal-paneled housing with a temperature difference between the inside and the outside of the drier of 150° F., where the loss through the ¾-in. panel is 0.63 B.t.u. and through the 1-in. panel is 0.438, a difference of 0.182 B.t.u. per square foot per hour per degree difference, and the loss through the ¾-in. panel is therefore 41½ per cent greater than through the 1-in.

Tests also show that in the average drier housings, as well as in some of the metal-paneled housings, the air leakage will account for from 25 to 40 per cent of the total steam consumption, and in

metal-paneled housings there will be a still further loss due to radiation, wherever there are through metal joints.

Due to the heat requirements for drying work, there will be a drop in temperature between the entering and the effluent air depending upon the material being dried, the amount of moisture to be evaporated and the type and construction of the drier.

Heated air is, of course, lighter than cold air and will rise, but as the air is rendered heavier by the cooling effect of evaporation to a greater extent than it is lightened by the water vapor, there is a tendency under natural draft for the warm air to form local upward currents, while the cold and damp air falls to the bottom, and consequently to have a uniform and positive air circulation a proper type of fan is necessary.

It is a matter of the greatest importance that the air always be introduced into the drier so as to get the most intimate contact with the material.

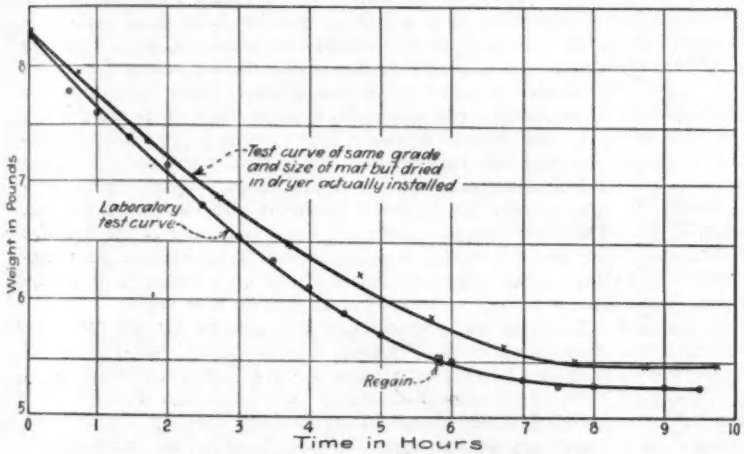

Fig. 3—Curves for Drying Coco Fiber Mats

As the drying process usually begins at the end of some mechanical operation, there must be a continuity of flow of materials so that production may be kept in step, and the nature and method of handling the materials must be considered in determining the type of drier to be recommended.

Classification of Driers

Driers may be divided into three general classes:

First, the dry loft, where the material is hung, stacked or laid in racks in a large room or building. In such cases the drying is effected by means of warm air uniformly distributed by means of a system of ducts from a central heating system.

Second, the compartment drier. This type of drier is used where the material is handled in batches by means of trays or trucks, where the space available is small, and where conditions must be varied as drying progresses or accurate control of temperature and humidity are required. Compartment driers may have their individual fan and heater or the air may be supplied from a central heating system by a series of ducts and dampers.

Third, the progressive drier. This type of drier is used where large quantities of materials must be dried continuously as they come through the plant. Such driers usually take the form of a tunnel and the material may be handled on trucks, woven wire apron, conveyor chains and the like and progresses against the current of hot air where the wet material requires a low temperature and high humidity and the dry material a high temperature and low humidity, and travels with the flow of the air under reverse conditions.

In the various industries the demand for drying has become so widespread in the nature and quantity of their products that no specific rules for the application of these general types or their modification can be given. The paper, lumber, ceramic, leather and chemical industries all require different types of driers. The textile industry requires other types, such as tenter frames, dry cans, cell driers and various special driers for knit goods, waterproof material, shade cloth, artificial leather, etc.

In connection with drying work in the industries are the problems of the utilization of exhaust steam or the waste heat from burning or cooling kilns, waste gases from boilers and the recovery of waste heat from various manufacturing processes. There is also the design of vapor absorption systems for the removal of vapor or elimination of fog and drip where large quantities of steam are liberated, such as dye houses, bleacheries, paper machine rooms and the like.

As the volume of air will vary with each change of temperature, due to the heat given up and the moisture absorbed throughout the drying cycle, the calculations will be simplified if the weight of air is used as a basis rather than the cubic foot. The necessary weight of air having been determined, the volume is calculated in order that the proper fan and heater can be selected.

An Example from Practice

The following theoretical heat analysis of an actual drying installation may serve as an example as to the procedure in drying work.

The problem under consideration is the drying of the ordinary household coco fiber door mats. The mats are to be hung over poles and carried to the driers on trucks direct from the looms. To handle the production properly it was found that a nine-truck drier was required, each truck holding an average of seventy mats.

Laboratory tests were run on samples of mats to determine the proper drying conditions, with the results shown by the lower curve in Fig. 3. The constant weight shown by this curve was checked by electric oven tests on the fiber. Regain tests under atmospheric conditions were also made so as to avoid possible injury to the fiber and reduce the drying time to a minimum.

After the driers were installed tests were made under commercial operating conditions, using the same grade and size of mats as in the laboratory tests, with the results as shown by the top curve in Fig. 3.

The actual drier installation is shown in Fig. 4.

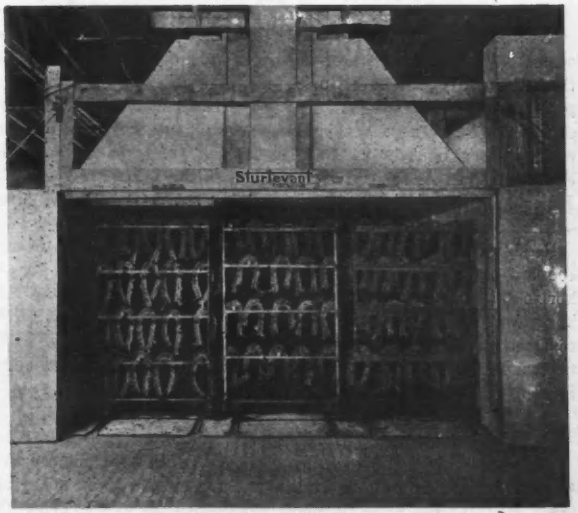

Fig. 4—The Drier Used for Coco Fiber Mats

DATA

(1) Average wet weight of mats, 8.25 lb.
(2) Average bone-dry weight of mats, 5.25 lb.
(3) Average air-dry weight of mats, 5.50 lb.
(4) Total moisture in mat, 3 lb.
(5) Moisture to remove, 2.75 lb.
(6) Total moisture in mat—dry basis, 57.25 per cent.
(7) Total wet weight of mats in drier, 3,660 lb.
(8) Total bone-dry weight of mats 2,330 lb.
(9) Total moisture to remove, 1,210 lb.
(10) Total weight of trucks, 4,500 lb.
(11) Specific heat of weight iron, 0.114.
(12) Specific heat of fiber, 0.324.
(13) Drier housing, type "A"—B.t.u. less per deg. diff., 0.13.
(14) Exposed area drier housing, 1,192 sq. ft.
(15) Air temperature in room, 80° F. d. b., 69° F. w. b., 57 per cent r. h.
(16) Moisture in room air per lb., 0.0152 lb.
(17) Average drier temperature (from test data), 190° F.
(18) Time allowed for heating up, 2 hrs.
(19) Total time in drier (from test data), 10 hrs.
(20) Moisture to be evaporated per hr, 121 lb.
(21) Moisture to be evaporated per minute, 2.016 lb.
(22) Entering air temperature (from test data), 210° F.
(23) Temperature drop through drier, 40° F.
(24) Temperature exit air, 170° F. d. b., 112° F., w. b., 17 per cent r. h.
(25) Moisture in exit air per lb., 0.0735 lb.
(26) Steam pressure gage, 55 lb.
(27) Weight of exit air per cu. ft., 0.0613 lb.

CALCULATIONS

Heat requirements in B.t.u. per hour:	
Heating up—	
Trucks (4,500 lb. × 110 × 0.114) ÷ 2	28,200
Fiber (2,330 lb. × 110 × 0.324) ÷ 2	41,500
Water (1,330 lb. × 110)	73,200
Drier, housing (neglected)	.....
Heat per hr. for heating drier contents	142,900
Evaporation—	
Water, 121 lb. × (1,029 + 38 = 1,067)	129,000
Conduction loss—	
Drier housing, 1,192 sq. ft. × 110 × 0.13	17,100
	289,000
Air leakage and loss through apparatus, 20 per cent	58,000
Total maximum heat consumption during first 2 hr.	347,000
Average heat per hr. over 10-hr. cycle:	
Heating, 142,900 ÷ 10	14,300
Evaporation	129,000
Conduction loss	17,100
	160,400
Air leakage, 20 per cent	32,000
Total average heat cansumption per hr.	192,400

Air required to supply maximum heat demand as above would be: 347,000 ÷ (40 × 0.2375) = 36,600 lb. per hr. = 610 lb. per min. The air to be exhausted to atmosphere would be 2.016 ÷ 0.0735 = 27.4 per min. Therefore the volume would be 610 ÷ 0.0613 = 9.950 cu. ft. per min. and 27.4 ÷ 0.0613 = 445 cu. ft. per min., say 450, would be exhaused to atmosphere. The air recirculated would be 9,950 — 450 = 9,500 cu. ft. min.

The thermal efficiency would be:

$$\frac{\text{Total heat for evaporation}}{\text{Total heat consumed per cent during first 2 hr.}} = \frac{129,000}{347,000} = 37$$

$$\frac{\text{Total heat for evaporation}}{\text{Total heat consumed per cent over 10-hr. period}} = \frac{129,000}{192,400} = 67$$

Interested in Japan's Needs

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., November 7, 1923.—Plans for a more concerted action on the part of American manufacturers in supplying the needs of Japan both during the present emergency and as a permanent development in the future were discussed last week in a conference between J. Walter Drake, Assistant Secretary of Commerce, other officials of the Department, and trade association executives. B. A. Smith, vice-president of the District of Columbia Paper Manufacturing Company, attended the conference on behalf of the paper trade.

Reorganization of export combinations under the Webb-Pomerene law and the possibility of combining non-competitive lines in horizontal groups with joint sales agencies in Japan were the most important of the proposed measures discussed. The manufacturers' representatives present agreed to report back to their several industries and endeavor to crystallize sentiment in favor of a more united foreign trade policy.

Superintendent of Penn Yan Co.

PENN YAN, N. Y., November 6, 1923.—A. L. Montgomery, formerly superintendent of the Halltown Paper Board Company, Halltown, W. Va., has been appointed superintendent of the Penn Yan Board & Paper Company at Penn Yan, N. Y.

Wisconsin Forest Protection

WAUSAU, Wis., November 5, 1923.—The permanent organization of the Wisconsin Forest Protective Association, formed here October 23, is being aggressively pushed, both by the Wisconsin paper mill men, and by the American Paper and Pulp Association, which was largely instrumental in getting the Wisconsin timber users together.

A most significant feature of the new organization's program is that it has the entire approval of the leading state officials interested in taxation and forest fire prevention. In all the letters which the president of the new organization, D. C. Everest, is writing to mills not represented at the organization meeting, he mentions the fact that a definite campaign for a state forest policy has the interest of three state officials who were present through the October 23 conference.

In the work of organization, some features of the organizations of fire prevention associations in the Pacific Northwest may be adopted. Secretary McBain is securing from these various associations copies of their articles of organization, because of their long success in organizing districts for the war against forest fires.

Another feature of the Wisconsin program may be the extension of the Badger state movement to other states where there is still pulpwood timber. Wisconsin, noted for its progressiveness, therefore, may take the lead in a new national campaign of the paper industry for the formulation of state forest programs, by co-operation between the pulpwood consumers and the state authorities. The paper industry has been a leader nationally in the campaign for adequate state and national forest legislation, but the formation of the Wisconsin Forest Protective Association is an approach to this problem from an entirely new angle.

The following directors have been selected for the new association: Guy Waldo, Flambeau Paper Company, Park Falls, Wis.; O. Bache-Wiig, Wausau Sulphate Fibre Company, Mosinee, Wis.; F. E. Sensenbrenner, Kimberly-Clark Company, Neenah, Wis., and C. L. Cecil, Cornell Wood Products Company, Cornell, Wis. These four, together with President Everest, Vice-President Delbridge and Secretary McBain will form the executive committee of the new organization.

Forest Products Association Meets

UTICA, N. Y., November 8, 1923.—The Empire State Forest Products Association is holding its eighteenth annual meeting today at the Hotel Utica.

The morning session will be called to order at 10 o'clock by President Ferris J. Meigs who will make his annual address. Treasurer W. Clyde Sykes will make his report as will A. B. Recknagel, Forester and Secretary. Committee reports will then be made by the various chairmen and the session will close with the election of officers for the ensuing year.

At the afternoon session to be held at 2 o'clock there will be an open forum on Forest policy with brief papers as follows: "Recent Developments toward a Forest Policy for State and Nation," R. S. Hosmer; "The Place of the Forest Industries in Forestry in New York," Franklin Moon; "The Place of the New York State Forestry Association," Hon. Henry Sage.

George N. Ostrander will preside as toastmaster at the banquet in the evening. Hon. John D. Clarke will speak on "A Federal Forestry Bill" and J. Elmer West on "Power Development." The report of the committee on resolutions will also be received at this time.

Richmond Machinery Co., Moves

CHICAGO, Ill., November 5, 1923.—The F. C. Richmond Machinery Company, representatives for The Conveyors Corporation of America, have moved their offices and salesrooms to 320 West Second street, Salt Lake City. The new location is two blocks west of their former address.

NEW ELECTRICAL RECORDING SYSTEM AS USED IN PULP AND PAPER MILLS

By L. G. Bean, District Manager, The Bristol Co., Boston, Mass.

A new electrical instrument recently designed and distributed by the Bristol Company, of Waterbury, Conn., has found a particular application in the progressive pulp and paper mills. This new instrument installation enables a measurement of pressure, temperature, liquid level, flow, motion or other qualities, to be made at a distance up to several miles from the point at which the actual condition takes place. For instance, this set of instruments is capable of measuring the pressure which exists in a steam main up to six or seven miles away from the point at which the instrument is located.

Such an installation consists of a transmitting instrument, connected by three wires of any desired length, to a receiving indicator or recording instrument which will record the change in conditions in any of the above quantities instantaneously over this long distance. Figure No. 1, as shown, gives a general idea of such an installation composed of a blind transmitter and an indicating receiver. Figure No. 2 shows a similar installation but with an indicating transmitter and recording receiver. Fume proof cases can be readily procured so the instruments are immune from acid attack or corrosion.

The uses which have been made of such an instrument are varied and numerous and are as many as the uses to which an ordinary thermometer, pressure gauge, or other measuring instrument can be applied.

Of particular interest to Pulp and Paper industries are the following applications for which the long distance transmitting system proves a great assistance and, in many cases, a considerable factor in the economical operation of Pulp and Paper plants.

1. For transmitting to Boiler Room the steam pressure which actually exists in the Digester House or in other parts of the plant.

In many plants, it happens that the engineer and boiler plant hands are most conscientious in their endeavors to maintain an even steam pressure at the digester house, but because of other drains upon the system, it is very difficult to do this and the only means of knowing whether such a pressure is kept constant in the digester house is by frequent inquiries. A long distance transmitting installation in the digester house, with the receiving indicator or recorder in the boiler house, keeps the engineer informed at all times as to just what pressure he is actually maintaining at the digester house or at the ends of his lines. This, of course, does away with the keeping of excessively high pressure in the boiler plant to insure proper pressure at the ends of the lines. The engineer always knows his line drop and does not have to guess at this variable element. Similarly, recorders can be placed in the superintendent's office to keep track of the same conditions, or as many transmitters can be used as there are points from which it is desired to control the pressure.

Control of Steam Pressure

Summarizing, the whole arrangement results in the engineer controlling his steam pressure from the end of the line where the change in demand is most readily felt, rather than from the boiler room where the pressure generally remains much more constant.

2. To record the level of Stuff or Bleach Liquor in any Stuff Chest or Storage Tank.

Such an installation would consist of an ordinary liquid level gauge, operated on a pressure system, to record the height of stock in any such tanks. The transmitter should be of an indicating form and connected to a receiver which would be placed either in the superintendent's office, or where the foreman in charge of these tanks could readily keep watch of the same. These save many trips to the storage tanks and always give an accurate indication of the amount of stock in these containers.

3. Water Head on Grinder Turbines.

The change in this head naturally changes the power developed from the grinder turbines and it is often desirable for the operator to know just what head is acting on his turbines. Since the storage

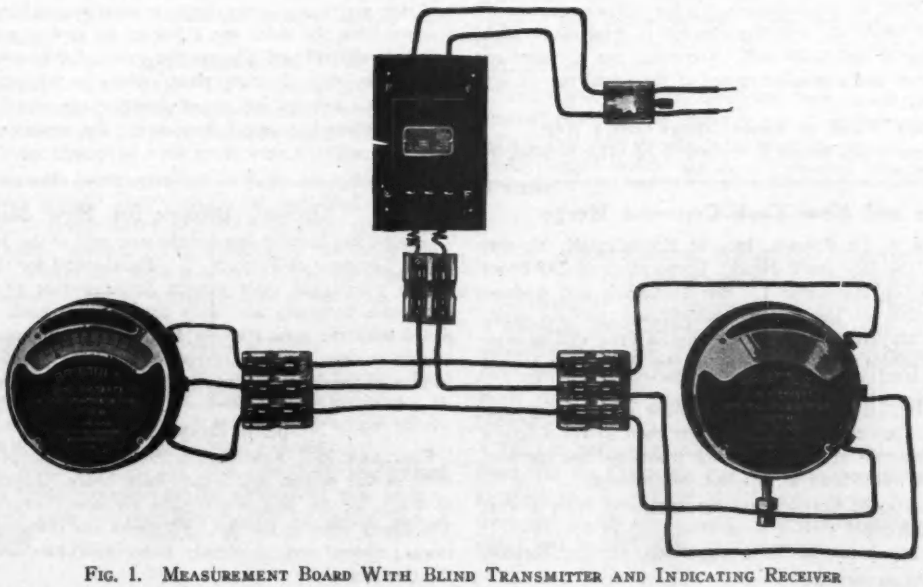

Fig. 1. Measurement Board With Blind Transmitter and Indicating Receiver

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reservoir is frequently some distance from the turbines, this is hard to accomplish by the ordinary gauge or mercury column. A long distance transmitting set will convey this information over the distance and keep an accurate indication before the operator, all the time, of just what head he is operating under. A recorder on the same head can also be placed in the Superintendent's office, if desired, to keep a check on this head.

4. Pressure of Temperature in different sections of Fourdrinier Dryers.

It is frequently desirable that the operator of a machine should know how either the pressure or temperature, or both of these qualities, is varying in the different sections of his dryers. Either of these can be readily transmitted to one point of the machine by means of a long distance set. Such a set, having four transmitters and one receiver, which could be readily switched to any of the transmitters, would give this information without necessitating the operator moving from his usual position. If the steam pressure in the rolls is desired, an indicating pressure transmitter is used. If temperature is desired, an especially constructed thermometer transmitter is used, of which the sensitive element is inserted through the journal bearing of the dryer roll. Recorders can be fitted on such a set if desired, and a graphic record of the actual run of any paper thus obtained.

5. Flow of Stock, Water, or Waste Liquors Over a Weir.

The measurement of this quality is frequently of value to a superintendent or others making paper, and would be much more used if it were readily obtained. A float or diaphragm arrangement attached to the transmitter readily measures this flow. The electrical system then transmits it to the desk of the superintendent or foreman, where it is always clearly indicated before him. Thus he can keep a constant watch upon such wastes or inefficiencies as occur from this source.

6. The Temperature of Bleach Powder Storage Rooms.

It is generally very desirable to maintain the temperature in these rooms at a nearly constant point and it necessitates frequent trips, and thus valuable time or workers, to see that this temperature is maintained. A long distance transmitting installation in these rooms, with the receiver placed where a responsible employee can watch it without leaving his work, assures that this temperature is always kept at a point which is best for the bleach powder. Electric alarms can also be applied to this use, but only give the danger points, while the long distance system gives the actual indication of the state existing in those rooms.

There are many other such applications, wherein this can be employed but the above are a few of the typical installations which are most efficient and wherein the value of this instrument becomes well appreciated. In many plants, where an employee was formerly sent several times a day, or on frequent occasions, to measure any quantity, these instruments have saved the expense of such a man's time and, within a very short time, have paid for themselves.

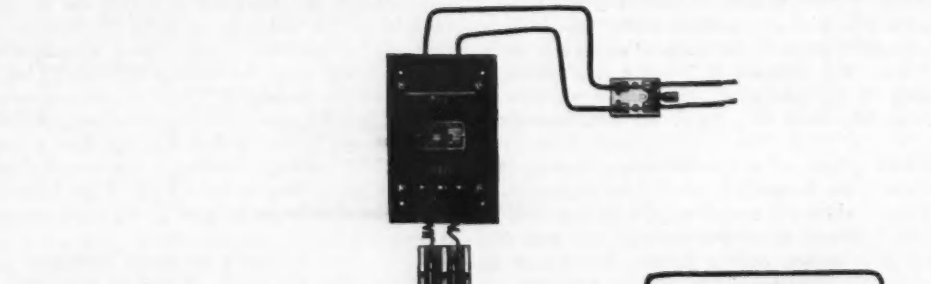

FIG. 2. MEASUREMENT BOARD WITH RECORDING RECEIVER

Brooklyn and New York Concerns Merge

The business of A. De Angelis, Inc., of Brooklyn, N. Y., was consolidated with the Marquardt-Hewitt Corporation of 250 Front street, New York, on November 1. Ben DeAngelis and Andrew DeAngelis, heretofore of the former concern, will join the latter organization and all business of the DeAngelis firm will be conducted from the offices and warehouse of the Marquardt-Hewitt Corporation.

A. DeAngelis, Inc., is one of the oldest paper mill supplies concerns in the New York trade. Founded more than 35 years ago, it has been at the forefront in the paper stock trade, and has operated one of the largest warehouses in this line in Brooklyn.

The Marquardt-Hewitt Corporation was organized about a year ago, and has made rapid strides since it started in business. It operates a large warehouse at 250 Front street, running through to Water street.

Ground Broken for New Mill

Ground has been broken for the new mill of the John A. Manning Paper Company at Troy, N. Y. The demand for their product has so far over-taxed their present facilities that this new mill has been made necessary and every plan is being made to have it completed with the least possible delay. The equipment will be thoroughly modern in every respect and will be devoted to the manufacture of their present grades of rope manilla and insulating papers.

Rain Helps Maine Mills

PORTLAND, Me., November 6, 1923.—Most of the paper and pulp mills in this section which have been badly handicapped from lack of water for the past few months are now operating on full time. The heavy rains in the last two weeks are bringing all streams up toward normal and no further water difficulties are anticipated for the time being.

MACHINE MOLDED GEARS

When a molded, grey iron gear, fourteen feet in diameter and with an 18 inch face, is so well made that after completion the gear is found to be less than one-sixteenth of one inch out-of-round, and each tooth to be exact in pitch, the process of manufacture is worthy of note.

The gear in point was made for a cement mill—a service demanding the very best in workmanship and materials, because of the ever present dust and grit in such mills.

Molding this gear by the pattern method would not only be equally expensive, but the method would carry with it the risk of error in pitch and roundness. Hence the process of machine molding was employed—a process well illustrated by the accompanying cut. This process molds one tooth at a time, the "pattern" being a "single tooth block," ordinarily made of brass, and machined to absolute accuracy.

The tooth block is mounted on the ram of the gear molding machine. This ram, or head is adjustable, so as to give the correct pitch diameter. The ram is also moveable up and down, so as to bring the tooth block in position for holding the teeth, and so it can be removed while the table is being rotated.

The flask is placed on the table of the machine and properly centered. The table of the machine is rotated by hand, through a series of gears. This gives the table a slow action and enables it to accurately index the proper number of teeth. The booth block is placed in position in the flask, and the tooth is rammed up by hand. The tooth block is then withdrawn from the flask, and the table rotated the exact amount necessary to bring it in position for the next tooth. This process is repeated until all the teeth have been so molded.

The arms are made in cores, or in green sand, depending somewhat on the size of the gears, etc. The making of the arms differs in no way from ordinary molding.

Because of the fact that the teeth are accurately indexed and the single tooth pattern has no draft, being drawn up through a stripping plate, and because more time can be spent on a single tooth than it would be possible to spend on each tooth of a full pattern, the machine molded gear is necessarily very much more accurate than any pattern molded gear could be. And, though it might appear that machine molded gears would be far more costly than pattern molded, the opposite is true, especially in the cases of the larger sizes.

All these gears are made from a special mixture, ranging on the average about 20 per cent steel and 80 per cent grey iron. This very materially increases the tensile strength of the final product. Grey iron ordinarily possesses a tensile strength of 18,000 to 20,000 pounds per square inch of cross section, while the mixture including steel will raise this tensile strength to 25,000 or more.

Hardness Resists Wear

Machine molded gears have a surface chill and hardness to resist wear that cut gears do not have, by reason of the fact that the surfaces of cut gears are whittled away. Very often this hard, chill surface extends one-eighth of an inch under the surface, which of course insures longer life and a better wearing surface.

It is interesting to note that many of the larger cement mills which, for the past few years, entirely forsook the cast iron gears in favor of steel gears are now returning to the machine molded cast iron products. It has been found that in spite of the harder material which comprises the steel product, the dust and grit encountered in cement plants wear away the steel just as rapidly as they do the grey iron. Hence the far greater expense for steel gears is not justified.

The accuracy with which machine molded gears are made tends to decrease the power imput and lengthen the life of the machine or mill being operated.

The fourteen foot gear shown was made by the H. W. Caldwell & Son Company plant of the Link-Belt Company of Chicago.

Held Get-together Party

[FROM OUR REGULAR CORRESPONDENT.]

KALAMAZOO, Mich., November 6, 1923.—The Employes' Welfare Association of the Kalamazoo Stationery Company held its first get-together party Friday evening at Pythian Temple. The event brought out a crowd of over 300 and was in every way a huge success. Superintendent H. F. Burkhart and George Gagoudy were principals in arranging details for the event.

Stunts were offered by the various departments. The papeterie division was awarded a silver trophy for a singing specialty, led by Miss Gertrude Vervenne. Frank Perkins rendered several solos and Edward Marantette and Clarence Schasak staged a burlesque on the Dempsey-Firpo fight.

The costume features were excellent and it was necessary to award three extra prizes. The winners included Ted Osborne, Blanche Rockwell, Gertrude Kohls and Margaret Hill. J. J. Murray, with his "Grater" speech; P. E. Holland in the "doughnut" stunt, and Messrs. Shafer and Reid with their fiddle and trombone were features enjoyed. Dancing continued until a late hour.

Improvements at Mohawk Plant

COHOES, N. Y., November 6, 1923.—Mohawk Paper Makers, Inc., are erecting a power house which will generate sufficient power to operate their Cohoes mill and which will utilize to advantage waterpower which has not heretofore been fully developed.

The company's Waterford mill has been completely modernized and production is being increased by the addition of new beaters, Jordans, etc. Both mills are operating steadily on special papers in white and colors.

Demand Causes Price Increase

[FROM OUR REGULAR CORRESPONDENT.]

BOSTON, November 3, 1923.—During the past week the local market quotations under the caption Old Papers saw substantial increases in both purchasing and selling prices of the following subdivisions: Gunny Bagging, No. 1 Scrap Burlap, No. 2 Roofing Bagging and Mixed Strings. These increases according to an attache of E. Butterworth & Co., Inc., were due to the demand for such articles.

With the copious rainfall of last week in this section persons interested in the paper industry are looking forward to the paper mills in this state making every effort to catch up with their regular weekly output which was greatly reduced because of the scarcity of water.

Reparation Awarded International

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., November 7, 1923.—The rate on pulpwood in carloads, from Kennebago, Me., to Berlin, N. H., was found unreasonable by the Interstate Commerce Commission last week and reparation was awarded to the International Paper Company in its case, docket No. 14529 against the Maine Central Railroad Company, et al.

The original complaint of the International Paper Company alleged that the sixth-class rate of 16.5 cents charged for the transportation of 151 carloads of pulpwood during June and July, 1920, from and to the points named above was unreasonable. The decision was handed down on that basis.

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GOVERNMENT PAPER BIDS AND AWARDS

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., November 7, 1923.—The Government Printing office has received the following bids on 3,000 pounds of oiled tympan paper, 24 x 36—86, in 48-inch rolls, maximum weight 150 pounds:

Mathers-Lamm Paper Company, $.094 (per lb.); T. A. Cantwell & Co., $.0896; Maurice O'Meara Company, $.09; The Broderick Paper Company, $.09; The Whitaker Paper Company, $.0925; The Paper Manufacturers Company, $.0925; R. P. Andrews Paper Company, $.093; Reese and Reese, $.0889; C. B. Hewitt & Bros., Inc., $.1$; Dobler and Mudge, $.10; Thomas Barrett & Son, $.10; Barton, Duer and Koch Paper Company, $.07875.

On 15,400 pounds of double coated both sides book paper, sample A, 24 x 38—77: Reading Paper Mills, $.135 f.o.b. mill; R. P. Andrews Paper Company, $.0975; Maurice O'Meara Company, $.1195; Whitaker Paper Company, $.099; Kalamazoo Paper Company, $.087; Bryant Paper Company, $.0922; Old Dominion Paper Company, $.1099; $.1149; Stanford Paper Company, $.109 less 3 per cent; The Broderick Paper Company, $.1025; Reese and Reese, $.1073; Allied Paper Mills, $.08435.

On 1,800 pounds blue glazed bond paper, 22 x 34—18, No. 9: Reese and Reese, $.2395; Dobler and Mudge, $.24; Whitaker Paper Company, $.1445; R. P. Andrews Paper Company, $.2375; Old Dominion Paper Company, $.2469; Hano-Weinkrantz Company, $.50.

On 2,400 pounds smooth green cover paper, 20 x 25—48: Graham Paper Company, $.1025; Old Dominion, $.104; Knowlton Brothers, $.105; R. P. Andrews, $.1255; Mathers-Lamm, $.0988; Barton, Duer and Koch, $.1345; Dobler and Mudge, $.10; Reese and Reese, $.0987; The Broderick Paper Company, $.0985.

On 17,600 pounds single coated both sides book paper, 29 x 41—88: Reading Paper Mills, $.13 f.o.b. mill; R. P. Andrews Paper Company, $.0875; Whitaker Paper Company, $.099; Dobler and Mudge, $.085; Kalamazoo Paper Company, $.0845; Bryant Paper Company, $.0898; The Broderick Paper Company, $.0925; Stanford Paper Company, $.1090 less 3 per cent; Reese and Reese, $.0971; Old Dominion, $.1119 and $.1099 and the Allied Paper Mills, $.08435.

On 112,000 pounds white sulphite writing paper; 40,000 pounds, 17-inch rolls, 250 pounds each No. 20; 36,000 pounds 12-inch rolls, 300 pounds each No. 13; 36,000 pounds 21-inch rolls, 300 pounds each No. 16; R. P. Andrews Paper Company, $.0689, $.0755, $.0709 delivered; Broderick Paper Company, $.0735, $.081, $.0735; Maurice O'Meara, $.0845, $.1015; $.0945; Whitaker Paper Company, $.0775; $.0945; $.0775; Champion Fibre Company, $.0744, $.0744, $.0744; Reese and Reese, $.0749; $.0799, $.0749; Samuel S. Alcorn, $.078, $.083, $.078; Dobler and Mudge, $.085, $.105, $.085; International, $.071, $.0785, $.071; Old Dominion, $.08199, $.09978, $.08174; $.08174, $.08919, $.08174; T. A. Cantwell, $.082, $.082, $.082; and $.1189, $.1189, $.1189; R. A. Cauthorne, $.0749; $.0799 and $.0749.

On 30,000 pounds white machine finish printing paper No. 1, basis 25 x 38—35, in 19-inch rolls of 350 pounds each: Kalamazoo, $.0665; Bryant, $.0705; The Champion Fibre Company, $.067 f.o.b Washington; Old Dominion, $.06914; R. P. Andrews Paper Company, $.0672 delivered; Stanford Paper Company, $.088; Dill and Collins, $.0705 f.o.b. Washington; Dobler and Mudge, $.0644 f.o.b. Plainwell, Michigan; International, $.0686; Allied Paper Mills, $.07292 f.o.b. Washington; Broderick, $.0693 f.o.b. Washington; Whitaker, $.0795; Reese and Reese, $.0669 f.o.b. Washington.

The Printing Office has received the following bids: On 10,400 lbs. light green coated cover paper, 26½ x 41—104: Reese and Reese, $.1024 per lb.; Dobler and Mudge, .09 f. o. b. Mill; R. P. Andrews Paper Company, $.0967; F. T. Parsons Paper Company, $.102; Osborn Paper Company, $.0957 f. o. b. Kalamazoo, Mich.; Allied Paper Mills, $.10; Graham Paper Company, $.1065; The Broderick Paper Company, $.96; The Whitaker Paper Company, $.10.

The Government Printing Office has received the following bids on 37,200 lbs. Kraft wrapping paper, various sizes:

Barton, Duer & Koch Paper Company, $.0672 per lb.; Wilkinson Brothers, $.0635 and $.06745; D. S. Walton Company, $.0616; The Whitaker Paper Company, $.0651; R. P. Andrews Paper Company, $.071; Maurice O'Meara Company, $.071; American Writing Paper Company, $.075; Graham Paper Company, $.0645; The Champion Fibre Company, $.0625; The Broderick Paper Company, $.0703 and $.0655; Reese & Reese, $.06035 and $.06785; Republic Bag & Paper Company, $.0614; T. A. Cantwell & Co., $.0735; Trinity Bag & Paper Company, $.0639; Osburn Paper Company, $.0665; Old Dominion Paper Company, $.0684; Samuel S. Alcorn, $.063; Paper Manufacturers' Company, Inc., $.07; Orchard Paper Company, $.066; The R. A. Cauthorne Paper Company, $.0589; The Hubbs & Corning Company, $.0767 and $.0621.

The Government Printing Office will receive bids on November 12, on 15,000 pounds (300 reams) 25 x 38—50 white antique printing paper.

Bids will also be received on the same date for 15,600 pounds (350 reams) blue, green and suge rough cover paper 20 x 25—48.

Bids will also be received on the same date on 9,600 pounds, 200 reams, green, brown and tea colored same size smooth cover paper.

The Government Printing Office will receive bids on November 12, for 500,000 pounds of white news print paper in 48-inch rolls. Also, on the same date, bids will be received on two million pounds of U. S. postcard, cream bristol board.

The Government Printing Office has received the following bids: On 180,000 pounds white sulphite writing paper: 36,000 pounds No. 13, in 21-inch rolls, 300 pounds each: 144,000 pounds No. 20, 21 x 32—36.

Allied Paper Mills, $.096 and $.08905 per pound; R. P. Andrews Paper Company, $.0755, $.0683; Champion Coated Paper Company, $.075 and $.0765; The Broderick Paper Company, $.084 and $.084; Maurice O'Meara Company, $.0994 and $.0823; Whitaker Paper Company, $.0954 and $.0775; The Champion Fibre Company, $.0738 and $.0774; Dobler and Mudge, $.1015 and $.0826; Old Dominion Paper Company, $.07469 and $.07969; $.08999 and $.08819; and $.08844 and $.08924; Trinity Bag and Paper Company, Inc., $.0847; T. A. Cantwell, $.1189 and $.1189; Perkins-Goodwin Company, $.0795; and $.0845; International Paper Company, $.0781 and $.0756; Virginia Paper Company, $.0937 and $.0824; The R. A. Cauthorne Paper Company, $.0724.

On 10 reams drab cloth-lined cover paper, 36 x 36, 500 sheets to ream: The Holliston Mills, $125 per ream; T. A. Cantwell & Co., $118 per ream and $109.50; McLaurin-Jones Company, $76.25 less 2 per cent.

J. Josephson and Sons, $132.50; Dobler and Mudge, $112.50; Mathers-Lamm Paper Company, $112.50; $82.50; Whitaker Paper Company, $109; Broderick Paper Company, $80.25 and $108.75; Nashua Gummed and Coated Paper Company, $110.00; R. P. Andrews Paper Company, $83.50 and $108.50; Hano-Weinkrantz Company, $120.75; (all per ream respectively).

Bids were also received on 340,000 pounds white machine finish printing paper, No. 1, 24 x 38—34, and on 400,000 pounds white machine printing paper, No. 1, basis 25 x 38—35 in 21-inch rolls, 300 pounds each. Bryant Paper Company, $.076 and $.0705; (per pound); Allied Paper Mills, $.07295 and $.07295; International Paper Company, $.0725 and $.0675; Old Dominion Paper Company, $.07199 and $.06737; Whitaker Paper Company, $.0701 and $.0795 and $.082; R. P. Andrews, $.0708 and $.0658; R. P. Andrews Paper Company, $.0708 and $.0658; $.066 f.o.b. Plainwell, Mich., and $.062; Dobler and Mudge, $.0709 delivered Washington; The Champion Fibre Company, $.0696, $.0652; Kalamazoo Paper Company, $.07 and $.0665; Perkins-Goodwin Company, $.08 and $.0748.

Section of the

COST ASSOCIATION OF THE PAPER INDUSTRY

Affiliated with

THE AMERICAN PAPER AND PULP ASSOCIATION

Conducted by THOS. J. BURKE, C.A., Sec-Treas

RATIOS AND THE STATEMENT*

In the past the statement has been discussed in its analysis both in the Bulletin and in our pamphlet, "Financial Statements." It is now proposed to take two statements, over a five-year period each, and analyze them by the use of the various ratios so as to bring out by actual application the points that the ratios emphasize over and above that customary analysis based upon the Current Ratio. The following is a statement of Company A, taken as of December 31, 1918, to 1922. This is the statement of a small manufacturing company doing a business in the manufacturing of metal products.

Dollar Statement

	1918	1919	1920	1921	1922
Cash	3,122.30	3,915.27	4,306.50	4,785.70	4,370.93
Rec.	27,234.27	32,103.50	32,956.47	39.167.23	32,658.93
Mdse.	31,184.54	39,306.60	36,793.17	36,017.22	30,466.53
Current assets	61,551.11	75,325.37	74,056.14	79,970.15	67,596.39
Fixed assets	51,542.54	50,887.00	59,500.19	61,073.22	61,000.00
Total	113,093.65	126,212.37	133,556.33	141,043.37	128,596.39
Notes and accts. payable	30,168.21	35,610.84	32,878.17	34,764.42	31,319.22
Tax reserve	.....	1,556.00	3,124.00	4,000.00	1,570.00
Current debt	30,168.21	37,176.84	36,002.17	38,764.42	32,889.22
Funded debts	19,575.00	15,268.00	12,520.00	7,916.00	3,900.00
Total debt	49,743.21	52,444.84	48,522.17	46,680.42	36,789.22
Capital	40,000.00	40,000.00	48,000.00	56,000.00	56,000.00
Surplus	23,350.44	33,767.53	37,043.16	38,362.95	35,807.17
Net worth	63,350.44	73,767.53	85,034.16	94,362.95	91,807.17
Total	113,093.65	126,212.37	133,556.33	141,043.37	128,596.39
Sales	144,855.00	180,090.00	199,665.00	203,580.00	187,920.00

In order to get a unit representation these statements have also been reduced to what is known as a percentage statement. This is accomplished by dividing the separate items on the Dollar Statement by the total footing, so that the statement indicates how many dollars of each class of items there are for every $100 of the total footings. This 100 per cent statement exhibit is as follows:

100% Statement

	1918	1919	1920	1921	1922
Cash	2.77	3.10	3.22	3.39	3.48
Receivables	24.08	25.44	24.68	27.77	25.40
Merchandise	27.58	31.14	27.55	25.54	23.68
Current assets	54.43	59.68	55.45	56.70	52.56
Fixed assets	45.57	40.32	44.55	43.30	47.44
Total	100.00	100.00	100.00	100.00	100.00
Notes and accts. pay.	26.68	28.21	24.62	24.65	24.35
Tax reserve	.....	1.24	2.34	2.84	1.22
Current debt	26.68	29.45	26.96	27.49	25.57
Funded debts	17.30	12.10	9.37	5.61	3.04
Total debt	43.98	41.55	36.33	33.10	28.61
Capital	35.37	31.70	35.94	39.70	43.55
Surplus	20.65	26.75	27.73	27.20	27.84
Net worth	56.02	58.45	63.67	66.90	71.39

* From Robert Morris Associates Bulletin.

In order to have a basis against which to measure the progress or retrogression of this company, the figures from the Dollar Statement were cross-footed into a combined statement. By this process we accomplished an averaging of the five positions of the company, which at the same time averages not only the Dollar figures, but the economic stresses that existed during this period. This cross-footed statement and its 100 per cent complement are as follows:

	Combined Statement	100% Statement
Cash	20,610.70	3.21
Receivables	164,120.40	25.54
Merchandise	173,768.06	27.05
Current assets	358,499.16	55.80
Fixed assets	284,002.95	44.20
Total	642,502.11	100.00
Notes and Accts. pay.	164,740.86	25.64
Tax reserve	10,260.00	1.60
Current debt	175,000.86	27.24
Funded debts	59,179.00	9.21
Total debt	234,179.86	36.45
Capital	240,000.00	37.35
Surplus	168,322.25	26.20
Net worth	408,322.25	63.55
Total	642,502.11	100.00
Sales	916,110.00	.....

From the several statements of Company A the eight ratios for analysis have been developed together with the same ratios taken from the cross-footed statements or the average position of the company. These ratios are as follows:

Analytical Ratios

	1918	1919	1920	1921	1922	Cross
Current ratio	204	199	205	206	205	204
Mdse. rec.	114	122	111	91	93	105
Worth—fixed	122	144	142	154	150	143
Worth—debt	127	140	175	202	249	174
Sales—rec.	531	561	605	519	575	558
Sales—mdse.	464	458	542	565	616	527
Sales—worth	228	244	234	215	204	224
Sales—fixed	281	353	335	333	308	322

The normal attitude of the average credit man is to consult immediately the Current Ratio fluctuation to determine the relative goodness of the name over a succession of periods. The Current Ratio for Company A fluctuates from a minimum of 199 per cent to a maximum of 206 per cent. This means that at its lowest ebb this company had $199 of current assets for every $100 of current debt, and that at its peak it had $206 of current assets for every $100 of current debt. For the period it averaged $204 of current assets for every $100 of current debt. At its lowest point in 1919 the company was five points below its average and seven points below its high mark. This is respectively a sub-condition of about 2.5 per cent below its average and 3.5 per cent below its high point. In 1922 the Current Ratio was one point better than in 1918 and also one

point better than it was on the average or about four-tenths of 1 per cent improvement. These variations in the Current Ratio are really of negligible value in analysis because they deviate so slightly from a level position than they indicate little. About all the Current Ratio shows is that the company did not retrograde to any extent.

Taking up the ratio of Merchandise to Receivables we find the high point reached in 1919, when it reached 122 per cent, indicating $122 of merchandise for every $100 of receivables on the company's books. The low point was in 1921, when the merchandise amounted to only $91 for every $100 of receivables on the books. During the period the company averaged $105 of merchandise for every $100 of receivables. In 1918 and in 1919 we had at the beginning reasonable activity followed by very sharp price advances and difficulty in securing merchandise. It was a boom condition and the having of a substantial merchandise item as compared to the other features of the statement was certainly not disadvantageous from the standpoint of profit making. In 1920 we find that this company has reacted fairly sharply against its position of merchandise holding, which reaction continues through 1921. This is in conformity to sound business judgment in that a reaction against merchandise holding at this time when compared to the other items of the statement indicates an appreciation of the danger of inventory loss in falling price periods. This ratio fluctuates parallel to the economic advantage of the business cycle and by so doing suggests that there has been a reasonable amount of managerial sagacity in the management of the company's affairs. This is a sidelight on the executive ability and sensitiveness of the management to economic conditions which is not reflected by the Current Ratio.

Worth to Fixed Assets

Passing to the ratio of Worth to Fixed Assets, we find it at its minimum in 1918 and at its maximum in 1921. In 1918 the company had $122 net worth for every $100 tied up in fixed or slowly liquidating assets. The ratio indicates that the company has steadfastly maintained a policy adverse to the undue tying up of its own capital in fixed assets. It has striven apparently to accomplish its manufacturing needs by other means than plant enlargement in that it has kept a growing margin between its net worth and its fixed capital. In 1922 there is a drop in this ratio, brought about, however, by a loss through operation apparently as there is no increase in the fixed assets. It is not to be wondered at that there was some recession in the net worth figures at this time, but the fact that the company has maintained its relationship of net worth to fixed assets substantially above its average for this period is an indication that the management has used every effort to keep its capital liquid, which, of course, is an element of soundness. This ratio well indicates that the company had during this period an appreciation of the danger of conversion of liquid capital into fixed capital during a period of artificial or super-activity.

The Worth to Debt Ratio is one of the most significant points in this study. Starting at a low point of 127 per cent, or $127 of net worth for every $100 of debt, the ratio makes a steady and considerable rise to a point of 249 per cent, or $249 of net worth for every $100 of debt in 1922. There is no reactionary movement in this ratio at any time. It reflects a determination on the part of the management to conserve its capital and to eliminate as far as possible the economic partnership of creditors. The ratio has very nearly doubled in strength—meaning that the owners of the business have secured a very much stronger hold upon the capital at use and that in 1921 and 1922 they were much less subject to the strains of creditor pressure than they were even in 1918. This is a very acute indicator of sound management and good judgment. A large part of the reduction has been in the funded debt which accounts in some degree for the lack of Current Ratio fluctuation in the face of debt reduction. The Current Ratio, however, as such, unless amplified by some such analysis as is shown by the Ratio of Worth to Debt, does not reflect this debt paying tendency which has strengthened the economic position of the company.

Ratio of Sales to Receivables

The Ratio of Sales to Receivables does not show any very considerable indicator of moment. It fluctuates from 531 per cent, indicating sales of $531 per year for every $100 of receivables outstanding on statement date, to 605 per cent, with an average of 558 per cent. The company reached its highest point of collectivity in 1920, the year of the depression. This would seem to indicate possibly that with the slowing up of business the latter part of that year, there were less accounts outstanding as the result of six months' operations than normally. It indicates that the company collected in spite of the depression. In 1921 it might be safe to assume that the company in order to move its merchandise, offered some concession in terms, allowing its collection period to lengthen and through its own strength supporting its purchasers so that it could continue trading operations. As conditions improved the company again tightened up its collection policy, so that by the end of 1922 the ratio of sales to receivables is substantially in excess of its average.

The ratio of sales to merchandise indicates that in the period of 1918 and 1919 the company was at its lowest in merchandise turnover. This was the period of the cycle when prices were advancing and when the holding of merchandise was not of dangerous import. In 1920, the year of the collapse, the company made a very substantial increase in its merchandise turnover. This would naturally indicate that by the holding of less merchandise and by the increasing rapidity of its turnover, the company was relieving itself to a great extent from the jeopardy of falling prices. For the remainder of the period the company continued its rapid and increasing merchandise turnover, maintaining itself in a position of merchandise liquidity so that it is not carrying on its books greater than a sixty days' supply of merchandise and consequently is not subject to more than sixty days' fluctuation in prices. The fact that the company has decreased its merchandise in 1922 and has increased in turnover would indicate that the management might believe that we were not yet over with the liquidation and that they preferred to operate on a slightly less volume, but with the danger of further price recession reduced to a minimum.

The Sales to Worth figure indicates little except that the company has for the first four years maintained a fairly average activity of its own funds. The considerably higher turnover in 1919 is probably due to inflated prices. In 1922 the company is turning its capital only twice. This might indicate a degree of immobility were it not for the fact that its collections are good and its merchandise turnover at the peak. With these latter two operations the low degree of capital turnover may well be taken to mean a conservatism and a policy of waiting.

The Sales to Fixed Assets fluctuates from a low point in 1918 of 281 per cent to a high point of 353 per cent in 1919. This high figure is also probably due in some considerable degree to price levels. The company's figures indicate in this proportion, however, that it has been conservative in its investment in fixed assets and that it has kept the productivity of its fixed assets reasonably high. In 1922 the productivity of these assets as measured by sales falls somewhat, which is a further reflection of conservatism and a lack of desire to take unnecessary risk.

Significant Facts Shown

In the analysis of this particular statement it would seem that the most significant thing is the relationship of net worth to debt and the two ratios of sales to receivables and merchandise. These latter ratios indicate a conservatism and an intelligence in management, not reflected by the current ratio, which shows the management of the company has been keenly aware of the danger of the cyclical disturbances which upset the country in 1920, and it has in a great measure avoided them so that we find it in 1922 probably considerably stronger than it was at the beginning of operation during this period.

It is now our purpose to apply the same tests to another example and for that purpose three exhibits are presented from which to

make deductions. These comprise the formal comparative statement of the actual figures of the company, a comparative statement of the 100 per cent statement, and a comparative statement of the ratios for each successive statement coupled with an adjusted average against which to measure them.

Dollar Statement

	1918	1919	1920	1921	1922
Cash	1,566.10	2,192.40	2,505.50	2,818.02	3,052.92
Receivables	19,938.31	25,419.31	24,636.31	26,202.31	25,575.91
Merchandise	10,698.91	18,137.41	24,088.32	28,786.21	31,237.17
Current assets	32,203.22	45.749.12	51,230.13	57,806.54	59,866.00
Fixed assets	19,575.00	19,575.00	23,490.00	35,040.50	47,375.00
Total	51,778.22	65,324.12	74,720.13	92,847.04	107,241.00
Notes and ac. pay.	15,558.21	21,822.21	24,954.21	27,538.11	29,104.11
Tax reserve	.....	780.00	780.00	1,400.00	1,575.00
Current debt	15,558.21	22,602.21	25,734.21	28,938.11	30,679.11
Funded debt	9,670.00	12,000.00	15,660.00	23,500.00	27,400.00
Total debt	25,228.21	34,602.21	41,394.21	52,438.11	58,079.11
Capital	23,500.00	23,500.00	23,500.00	27,500.00	35,000.00
Surplus	3,050.01	7,221.91	9,825.92	12,908.93	14,161.89
Net worth	26,550.01	30,721.91	33,325.92	40,408.93	49,161.89
Total	51,778.22	65,324.12	74,720.13	92,847.04	107,241.00
Sales	86,130.00	105,705.00	125,280.00	140,940.00	122,931.00

100% Statement

	1918	1919	1920	1921	1922
Cash	3.02	3.36	3.35	3.04	2.85
Receivables	38.51	38.91	32.97	28.22	23.84
Mechandise	20.66	27.76	32.24	31.00	29.13
Current assets	62.19	70.03	68.56	62.26	55.82
Fixed assets	37.81	29.97	31.44	37.74	44.18
Total	100.00	100.00	100.00	100.00	100.00
	1918	1919	1920	1921	1922
Notes and ac. pay.	30.05	33.41	33.40	29.66	27.14
Tax reserve	.....	1.19	1.04	1.51	1.47
Current debt	30.05	34.60	34.44	31.17	28.61
Funded debt	18.67	18.37	20.96	25.31	25.55
Total debt	48.72	52.97	55.40	56.48	54.16
Capital	45.39	35.98	31.45	29.62	32.64
Surplus	5.89	11.05	13.15	13.90	13.20
Net worth	51.28	47.03	44.60	43.52	45.84
Total	100.00	100.00	100.00	100.00	100.00

Analytical Ratios

	1918	1919	1920	1921	1922	Ave.
Current ratio	206	202	199	199	195	199
Mdse. rec.	53	71	97	109	122	92
Worth—fixed	135	156	141	115	104	124
Worth—debt	105	88	80	77	84	85
Sales—rec.	432	415	508	537	480	477
Sales—mdse.	805	582	520	489	393	514
Sales—worth	324	344	375	348	250	322
Sales—fixed	440	540	533	402	259	400

Analysis

The high point for the current ratio is in 1918 and it declines from 206 per cent, or 2.06 for 1, for that year, to 195 per cent, or 1.95 to 1, in 1922. This is a decline of 11 points in 206 or 5.3 per cent. This is not an alarming deviation, but the usually recorded deviation would be less significant because the first would usually be recorded 2.0 for 1 and the latter 1.9 for 1, showing a deviation of only one point in 200. The only thing alarming in the ratio is the continued reaction, which, however, was liberally explained in many other instances during this period by the cyclical strains and price pressures. This ratio then might be said to be slightly negatively neutral.

In our next ratio we begin to get some reflection of the business management of the company that is of indicative value as to the ability and judgment of the management. In 1918 and 1919 we were in a period of definitely strong and advancing prices. Merchandise holding at this time was accompanied by little or no danger of inventory depreciation loss, but rather of a speculative profit. In the company under analysis, however, we find no advantage being taken of this situation. In 1918 the proportion between merchandise and receivables was 53 per cent. This means that for every $100 of receivables the company had $53 of merchandise. At a time when inventory holdings were profitable rather than dangerous this company elected to carry more than half of its total current assets in receivables rather than to hold a fairer proportion of merchandise. This can also be relatively noticed by reference to the 100 per cent statement in which the receivables were 38.51 per cent of the total assets and the merchandise amounted to only 20.66 per cent. This did not evidence a danger, but it does indicate an inability to take hold of an opportunity. The further performance of this ratio further emphasizes this error of judgment. As we advance into this economic cycle we find the proportion the Merchandise bears to Receivables steadily increasing. In 1920 these items are almost equal and in the unsteady years of 1921 and 1922, when unprofitable inventory adjustments were common, we find Merchandise exceeding Receivables by a substantial margin. This ratio traces for us one phase of the so-called moral risk indicating an inability of the management to read the economic sign posts of the cycle and to trim ship accordingly. By this we lift statement analysis a little beyond the purely financial into the realm of the analysis of the managerial capacity.

Rise and Fall of Ratio

The plant extension policy of the management is clearly shown by the ratio of Net Worth to Fixed Assets. In 1918 this ratio stood at 135 per cent indicating that the company had a Net Worth of $135 for every $100 invested in fixed assets. In 1919 this ratio made a substantial rise due to the non-increase of fixed assets and a substantial increase in Net Worth. But from that time this ratio falls steadily and considerably until in 1922 it was only 104 per cent or only a capital margin of four dollars per hundred over the amount of fixed investment. It seems to indicate a tendency on the part of the management to strive for volume production through plant enlargement rather than through increased plant efficiency. In this the company follows a frequently present condition at a time of great business boom. It is an instance of the increase in wealth, through profitable production, not equalling in proportion the investment of capital in fixed assets, thereby bringing about the conversion of liquid into fixed capital. This is a further showing of the perhaps questionable economic policies of the management as discussed in the preceding paragraph.

The Worth to Debt Ratio is truly an indicator in this analysis. Starting in 1918 at 105 per cent it shows a bare margin of $5 per hundred dollars of Net Worth which falls to 77 per cent in 1921 and makes a slight rise to 84 per cent in 1922. A checking up of the actual figures indicates no unreasonable increase in the Current Debt as compared to the current asset increase. In fact the percentage of the current debts to the total figures was 30.05 per cent in 1918 and in 1922 it was 28.61 per cent—a percentage decline but coupled with this was a heavy percentage increase in the funded debt, rising from 18.67 to 25.55 per cent. The company had financing burdens in plant enlargement and inventory increases that were financed by the use of funded borrowing to maintain a fairly consistent current ratio. This was accomplished and a creditor relying on the current ratio test alone might easily miss this sub-condition of unsoundness. The ease with which the management apparently secured funds on long time relieved it from financial pressure that might have forced it to conserve its worth against unsound fixed asset investment and thereby maintained its strength.

In this case the ratio of Sales to Receivables is of secondary importance. It indicates only that the company maintained a reasonable liquidity of receivables ending a little over the average.

The Sales to Merchandise ratio strengthens the deductions made when discussing the ratio of Merchandise to Receivables. The company's merchandise turnover was highest at a time when least important and fell to about half at the period of crisis. The company did not have merchandise at the start but began to accumulate it and by the crisis and slow years had nearly 50 per cent more proportionally as shown by the 100 per cent figures of 20.66 per cent in 1918 and 29.13 per cent in 1922. The company fell into the danger of being compelled to take an inventory adjustment loss and

this was increasingly evident each year to anyone by the use of a study showing the relation of Sales to Merchandise.

The Sales to Worth ratio is not analytically important here as it shows a sharp decline only in 1922, probably due to business stagnancy.

The Sales to Fixed Assets checks up sharply on the extension of non-current asset holdings. The object of plant holdings is to fabricate and sell but unless there is a relative maintenance in the resulting production, as represented by Sales and fixed assets, then the increase in fixed assets is not economically sound. This company has lost greatly in the relation of its net worth to its fixed assets and at the same time the relative productivity of these fixed assets falls off. This is economic perversion of wealth and is not by any means a strengthening element.

In Conclusion

The management has been able to maintain its apparent current position but only by sacrificing its debt position. It has increased its plant but has not maintained its productive efficiency. It has lessened its proportional ownership of capital at use. While its current ratio is 195 per cent or only 11 points below its 1918 position, its true liquidity and effectiveness is probably only about 80 per cent of its average.

Cost Convention Coming

The next cost convention will be held on Thursday, Friday and Saturday, November 22, 23 and 24, at the Sylvania Hotel, Philadelphia, Pa. Mr. Henry W. Stokes, president of the American Paper & Pulp Association, will attend; also Dr. Hugh P. Baker and Mr. G. W. MacNaughton of the Technical Association, who will speak on "Steam and Power Costs." Other speakers will include:

Prof. E. P. Moxey of the Wharton School of Finance & Commerce, of the University of Pennsylvania, Philadelphia, Pa.

Alexander Wall, Secretary, Robert Morris Associates.

J. Austin Smith, of J. Austin Smith & Co.

George E. Frazer, who will speak on "Budgets and Paper Mills."

Classification of Tin Paste

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., November 7, 1923.—Tin paste used for the surface coating of paper will be brought into the country as a manufacture of metal at 40 per cent ad valorem under a ruling of the Treasury Department.

In this connection Assistant Secretary of the Treasury, Moss, in a communication to the United States Appraiser of Merchandise at Boston in relation to the proper classification of powder of tin in water says:

"It appears that there is a difference in practice between your office and the office of the Appraiser at New York in the classification of the merchandise, you returning it for duty as a manufacture of metal at the rate of 40 per centum ad valorem under paragraph 399, and New York returning it as powdered tin at the rate of 12 cents per pound under paragraph 382.

"The Department in a letter to you dated the 2nd. instant expressed the opinion that if the merchandise is commercially known and used as a paste your advisory classification is correct, but if it is known as powdered tin the Department was of the opinion it was dutiable as powdered tin, notwithstanding it is imported in the form of a paste.

"In reply to the Department's request for information as to the commercial designation you state that inquiry has been made of the importers of this merchandise, and you enclose a copy of a letter from the McMaurin-Jones Company, the importers of the merchandise, who state that the merchandise is used for the surface coating of paper and that it is invoiced and commercially known as tin paste.

"In view of the foregoing the Department approves the practice prevailing in your office of advisorily returning this merchandise for duty as a manufacture of metal at 40 per centum as valorem under paragraph 399 of the Tariff Act."

Current Trade Paper

Abstracts of the Pulp and Paper Literature: Mechanical Part. W. Grunewald. *Zellstoff u. Papier* 3, 150-156 (June, 1923). The abstracts are limited almost entirely to German journals. The period covered is October, 1922, to March, 1923, inclusive.—J. L. P.

MONTREAL CONCERN SAVES

(*Continued from page* 30)

Work is under way on the power house of the St. Maurice Power Company at La Gabelle on the St. Maurice River, the dam having been nearly completed. It is expected to turn on the power about April 1 next. The initial development consists of four units of 30,000 h.p. each, but later the river below the power house can be deepened, giving an additional 40,000 h.p. of energy, and bringing the output of the development to 160,000 h.p. The power, when developed, will be fed in the Shawinigan Water and Power Company's system, the latter company controlling the St. Maurice Power Company.

Clarke Bros. to Be Re-organized

The first mortgage holders of Clarke Bros., Ltd., decided to accept an offer of purchase on the company's properties, submitted by a group of Chicago and Milwaukee business men, who are closely connected with the pulp and paper industry. Under the arrangements the present bondholders will receive second mortgage refunding bonds of a new company to be formed and in addition for each bond held a $50 share of 7 per cent cumulative preferred stock of the new company. The new bonds will bear interest at 7 per cent and mature in 20 years.

It is proposed to organize a new company with a Dominion charter, and a board composed of three representatives of the new interest, three representing the present bondholders, and a seventh director independent of the others. To provide working capital to put the plant into operation, a first mortgage bond issue will be made, amounting to $140,000, which a Chicago Trust company has arranged to purchase. The hope is held that the company's reorganization will now proceed satisfactorily.

Shortage of Lumbermen

A serious shortage of woods labor, which is said by lumbermen to be the worst in many years, exists in the Ottawa Valley, where, it is estimated, between eight and ten thousand more men are required to man the camps of the lumbering and pulpwood companies. Only about one-third of the number of lumberjacks required have been engaged and in some instances there have not been enough men to build the camps.

A Chief Forester at Private Expense

Nova Scotians are to have the advantage of a chief forester for the province, paid for by a private individual. F. J. D. Barnjum has, on his own account, engaged O. Shierbeck, formerly chief forester for Price Brothers, Quebec. Mr. Shierbeck, who is a Dane and a graduate of the University of Copenhagen, after a seven years' course in the study of forestry, has had ten years' practical work in his calling, during eight of which he was with the Danish Government Forest Service, and four with Price Bros. in Quebec forests. He won the $5,000 prize offered by Mr. Barnjum for the best method of suppressing and combating the spruce budworm, bark beetle and borer. Mr. Barnjum has already devoted much of his own money to the cause he has so much at heart, and is the unquestionable leader of effort and instruction in forest conservation in Canada. He is now about to start a nursery at his home, Annapolis Royal, N. S., under the direction of Mr. Shierbeck, for the benefit of farmers and other land owners.

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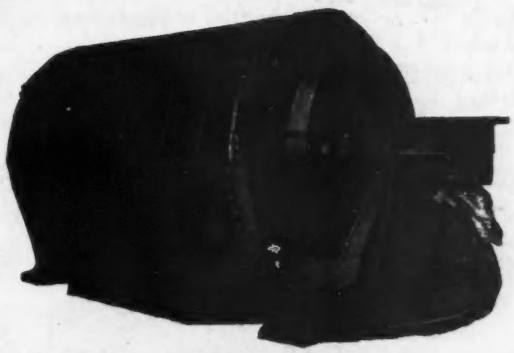

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NEW YORK IMPORTS

WEEK ENDING NOVEMBER 3, 1923

SUMMARY

News print.....247 bls., 268 rolls
Printing paper.....108 cs., 70 rolls, 94 bls.
Hangings .....83 bls., 5 cs., 5 pgs.
Wall paper .....32 bls.
Cigarette paper .....132 cs.
Filter paper .....13 cs.
Wrapping paper.....371 rolls, 2 bls.
Kraft paper.....364 bls., 776 rolls, 497 pgs.
Metal paper .....5 cs.
Writing paper .....175 cs.
Tissue paper .....6 cs.
Cap paper .....4,100 rolls
Packing paper.....489 bls., 1,967 pgs., 800 rolls
Miscellaneous paper...371 cs., 1,397 bls., 210 rolls

CIGARETTE PAPER

The Surbrug Company, Suffren, Havre, 20 cs.
Liggett & Myers Tobacco Company, by same, 20 cs.
J. Victorio & Co., A. de Larranaga, Barcelona, 1 cs.
A. Stefanides, Byron, Constantinople, 11 cs.
Rose & Frank, Eglantine, Havre, 80 cs.

WRITING PAPER

L. De Jonge & Co., A de Larranaga, Marseilles, 80 cs.
F. L. Kramer & Co., Albania, Liverpool, 5 cs.
Globe Shipping Company, Majestic, Paris, 3 cs.
G. W. Sheldon & Co., Bereugaria, Liverpool, 17 cs.

WRITING PAPER AND ENVELOPES

Publicity Paper Corporation, Clara, Trieste, 70 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., Albania, Liverpool, 9 bls., 2 cs.
W. H. S. Lloyd & Co., Celtic, Liverpool, 5 pgs.
A. C. Dodman, Jr., Inc., by same, 24 bls.
A. C. Dodman, Jr., Inc., Berengaria, Liverpool, 31 bls., 3 cs.
A. C. Dodman, Jr., Inc., Port Albany, Liverpool, 19 bls.

WALL PAPER

A. W. Fenton, Inc., Cleveland, Hamburg, 29 bls.
A. Murphy & Co., Majestic, Southampton, 3 bls.

TISSUE PAPER

Eaton, Crane & Pike Company, Majestic, Southamption, 3 bls.
Meadows, Wye & Co., Celtic, Liverpool, 5 cs.

CAP PAPER

H. Reeve Angel & Co., Inc., Lituania, Libau, 4,100 rolls.

FILTER PAPER

H. Reeve Angel & Co., Inc., Albania, Liverpool, 13 cs.

METAL PAPER

Hensel, Bruckman & Lorbacher, Cleveland, Hamburg, 5 cs.

NEWS PRINT

Publicity Paper Corporation, Falls City, Hamburg, 247 bls.
M. O'Meara Company, Orca, Hamburg, 157 rolls.
J. H. Scott Paper Company, by same, 96 rolls.
Guaranty Trust Company, by same, 15 rolls.

PRINTING PAPER

B. F. Drakenfeld & Co., Celtic, Liverpool, 10 cs.
Seaman Paper Company, Orca, Hamburg, 37 rolls.
Corn Exchange Bank, by same, 33 rolls.
Melby, Kuttroff & Co., Inc., Clara, Trieste, 68 bls.
Perry, Ryer & Co., Columbia, Glasgow, 98 cs.
Equitable Trust Company, Cleveland, Hamburg, 26 bls.

WRAPPING PAPER

C. K. MacAlpine & Co., Cleveland, Hamburg, 71 rolls.
Rudolph Paper Company, Randfjord, Hafslund, 7 rolls.
H. Reeve Angel & Co., Inc., by same, 11 rolls.
R. F. Hammond, Inc., Pres. Arthur, Bremen, 144 rolls, 2 bls.
Standard Underground Cable Company, Columbia, Glasgow, 138 rolls.

PACKING PAPER

J. P. Heffernan Paper Company, Pres. Arthur, Bremen, 109 bls.
Publicity Paper Corporation, Clara, Trieste, 1,026 pgs.
New York Trust Company, by same, 941 pgs.
Republic Bag & Paper Company, by same, 364 bls.
Republic Bag & Paper Company, Volendam, Rotterdam, 800 rolls.
Bernard Judae & Co., Orca, Hamburg, 16 bls.

KRAFT PAPER

Wilkinson Brothers & Co., Inc., by same, 353 bls., 228 rolls, 87 pgs.
W. Hartman & Co., Inc., by same, 410 pgs., 11 bls., 80 rolls.
International Acceptance Bank, by same, 468 rolls.

PAPER

J. H. Scott Paper Company, Orca, Hamburg, 256 bls., 82 rolls.
Wilkinson Brothers & Co., Inc., by same, 700 bls.
Seaman Paper Company, by same, 69 cs.
Corn Exchange Bank, by same, 77 bls., 24 rolls.
Japan Paper Company, Conte Rosso, Genoa, 68 cs.
Melby, Kuttroff & Co., Inc., Stavangerfjord, Kristiania, 104 rolls.
Whiting & Patterson, Berengaria, Liverpool, 9 cs.
Whiting & Patterson, Suffren, Havre, 15 cs.
Du Pont Cellophane Company, by same, 19 cs.
M. Gottesman & Co., Inc., Falls City, Hamburg, 184 bls.
Publicity Paper Corporation, by same, 180 bls.
M. O'Meara Company, by same, 191 cs.

RAGS, BAGGINGS, ETC.

Katzenstein & Keene, Inc., Cleveland, Hamburg, 41 bls. rags, 133 bls. bagging.
W. Schall & Co., by same, 109 bls. jute waste.
Salomon Brothers & Co., Eglantine, Dunkirk, 50 bls. thread waste.
E. J. Keller Company, Inc., by same, 131 bls. rags.
J. W. Hannay & Co., Kerbonkson, Belfast, 165 bls. paper stock.
Irving Bank Col. Trust Company, Columbia, Glasgow, 82 bls. paper stock.
S. Birkenstein & Sons, Albania, Liverpol, 79 bls. rags.
American Woodpulp Corporation, Volendam, Rotterdam, 324 bls. rags.
International Bank, Suffren, Havre, 83 bls. rags.
New York Trust Company, by same, 100 bls. rags.
Equitable Trust Company, by same, 55 bls. new cuttings.
Equitable Trust Company, A. de Larranaga, Marseilles, 83 bls. rags.
Cleveland Trust Company, by same, 211 bls. rags.
Cleveland Trust Company, Fenchurch, Marseilles, 66 bls. rags.
New York Trust Company, by same, 92 bls. rags.
Waste Material Trading Corporation, Anaconda, Antwerp, 356 bls. rags.
M. O'Meara Company, by same, 73 bls. rags.
Mechanics & Metals National Bank, by same, 68 bls. bagging.
Guaranty Trust Company, Pres. Arthur, Bremen, 134 bls. rags.
Kelly & Co., Clara, Trieste, 405 bls. rags.
I. Abela & Co., by same, 92 bls. rags.

OLD ROPE

W. Schall & Co., A. de Larranaga, Barcelona, 59 coils.
Brown Brothers & Co., Volendam, Rotterdam, 111 coils.
Brown Brothers & Co., Cleveland, Hamburg, 27 coils, 13 bls.
Brown Brothers & Co., Francisco, Newcastle, 398 coils.
Brown Brothers & Co., Francisco, Hull, 136 coils.

WOOD PULP

Poland Paper Company, Randfjord, Hafslund, 3,786 bls. sulphite pulp, 769 tons.
Central Union Trust Company, Randfjord, Trondhjem, 265 bls., 50 tons wood pulp.
E. M. Sergeant & Co., Randfjord, Hafslund, 875 bls., 197 tons wood pulp.
Kidder-Peabody Acc. Corporation, Randfjord, Kristiania, 5,750 bls., 1,168 tons wood pulp.
American Woodpulp Corporation, Pres. Arthur, Bremen, 75 bls., 15 tons wood pulp.
Ladenburg, Thalman & Co., Cleveland, Hamburg, 108 bls., 27 tons wood pulp.
J. Andersen & Co., Stavangerfjord, Kristiania, 750 bls.
R. F. Hammond, Inc., Morristown, Sundsvall, 4,500 bls., 750 tons wood pulp.

WOOD FLOUR

The Hansa Company, Falls City, Hamburg, 375 bags, 15,000 ks.
Innes, Spieden & Co., Orca, Hamburg, 1,075 bags.

CASEIN

The Kalbfleisch Corporation, Pan America, Buenos Aires, 984 bags.

PHILADELPHIA IMPORTS

WEEK ENDING NOVEMBER 3, 1923

Woodpulp Trading Company, Ltd., Stureholm, Gothenburg, 700 bls. kraft pulp.
D. J. Murphy, Anaconda, Antwerp, 396 bls. rags.
Waste Material Trading Corporation, by same, 291 bls. rags.
McKenzie & Foster, by same, 98 bls. rags.
E. J. Keller Company, Inc., by same, 296 bls. rags.
Philadelphia National Bank, by same, 115 bls. rags.
Alex. Brown & Son, by same, 251 bls. rags.
E. J. Keller Company, Inc., Falls City, Hamburg, 211 bls. rags.
W. Schall & Co., by same, 89 bls. rags.
L. H. Abenheimer, by same, 374 bls. rags.
Castle & Overton, by same, 271 bls. rags.
New York Trust Company, by same, 1,168 bls. rags.
Irving Bank Col. Trust Company, by same, 64 bls. rags.
Katzenstein & Keene, Inc., by same, 532 bls. rags.
Katzenstein & Keene, Inc., Olen, Havre, 384 bls. rags.
Katzenstein & Keene, Inc., Chickahominy, London, 520 bls. rags.
Katzenstein & Keene, Inc., Grande Gaard, Hamburg, 50 bls. rags.
Katzenstein & Keene, Inc., Manchester Mariner, Manchester, 69 bls. new cuttings.

BALTIMORE IMPORTS

WEEK ENDING NOVEMBER 3, 1923

Woodpulp Trading Company, Ltd., Stureholm, Gothenburg, 1,956 bls. kraft pulp.
R. F. Hammond, Inc., by same, 500 bls., 100 tons wood pulp.
Congoleum Company, Eglantine, Dunkirk, 245 bls. rags.
Certainteed Products Corporation, by same, 265 bls. rags.

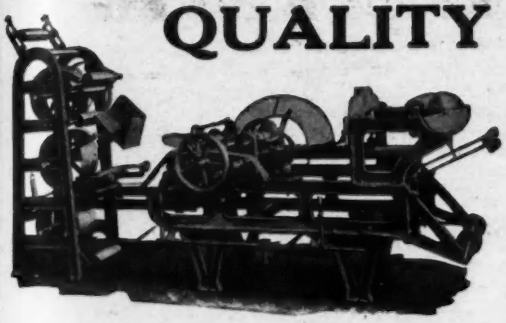
BOSTON IMPORTS

WEEK ENDING NOVEMBER 3, 1923

R. F. Hammond, Inc., Virginia, Christiania, 150 bls., 30 tons wood pulp.

(Continued on page 58)

QUALITY *plus* PRODUCTION



MR. BAG MANUFACTURER: For quality and production every machine is guaranteed, so you take no risk.
The Superintendent of a large bag plant, unsolicited, writes: "All the machines used by this Company have been furnished by you. During my fifteen years in the bag line I have used your machines, and consider them the best square and flat bag machines on the market. I see no reason why the bag manufacturers should not be satisfied with your machines. The design of the Fischer machines and workmanship are A No. 1."
Let us quote you on your requirements of flat and square, as well as satchel bottom machines for making 1/16, ⅛ and ¼ barrel sizes.

FISCHER MACHINE CO.
310-316 N. Eleventh St., Philadelphia, Pa.

The B Co. INC.

QUALITY PULPS

HAFSLUND NORWAY — "HAFSLUND BEAR" Bleached Sulphite

F:HAGA — "FORSHAGA" Bleached Sulphite

KRAFT HURUM NORWAY SPECIAL — "HURUM SPECIAL" Extra Strong Kraft

KOOS BAC — "BAMBLE" Extra Strong Kraft

The Borregaard Company
Incorporated
200 FIFTH AVENUE NEW YORK, N. Y.

THE SOURCE OF

SMALL PAPER ROLLS

OF EVERY DESCRIPTION

ADDING MACHINE ROLLS, CASH REGISTER ROLLS, TICKER TAPE, CLOCK ROLLS, BLASTING, DIE WIPING, TIRE WRAP, BED WRAP, BACKING PAPER, MAILING MACHINE ROLLS

AUTOGRAPH ROLLS, TIME CLOCK ROLLS, RIBBON PAPER, TELAUTOGRAPH, CARPET TISSUE, ROLLS FOR ANY MAKE OF AUTOMATIC REGISTERS, DOMESTIC OR EXPORT PACKING

Paper Manufacturers Co. Inc.
PHILADELPHIA - PENN.
MAIN OFFICE 526-528 CHERRY. ST.
FACTORY & R.R. SIDING. 13TH & NOBLE STS.

Fitchburg, Mass., U. S. A.

UNION SCREEN PLATE COMPANY

Lennoxville, P. Q. Canada

UNION BRONZE (Best phosphorized Cast Metal) **SCREEN PLATES** ROLLED BRASS (Union Quality)

Old Plates RECLOSED and RECUT to accurate gauge.

UNION BRONZE SCREWS for Screen Plates

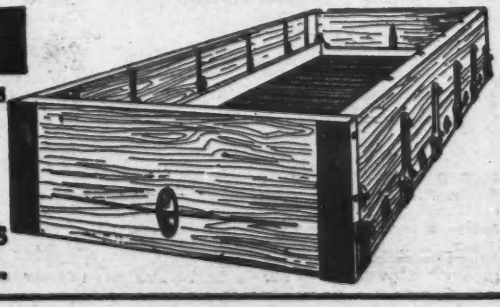
UNION BRONZE SUCTION BOX PLATES

Immediate Delivery of the Largest Orders. Satisfaction Guaranteed.

THE UNION WHITHAM SCREEN PLATE VAT AND FASTENERS

THE ORIGINAL — Over One Thousand in Successful Operation

THE BEST — Recommended by Screen Makers



New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, NOVEMBER 7, 1923.

A conviction that all was not well began stealing through the market during the past week. Viewing the situation of the past two months it becomes increasingly evident that the expected fall recovery has not gone quite so far as was expected. Prices in some of the grades of paper are showing a tendency to waver and dealers say that they have considerable supplies on their shelves amounting in some cases to more than they had at this time last year.

The mills continue to produce at capacity in many of the lines, but there seems to be a question of whether the jobbers or the consumers are taking up the difference between the production and the buying needs. An optimistic feeling pervades most quarters of the market and it is felt that things are not going to continue this way long. On the other hand certain authorities in the industry claim that the buying power has shown little tendency to stiffen possibly because consumers feel that lower prices are somewhere in the offing.

Just what will be the outcome is difficult to foresee. About six weeks ago it looked as though the paper industry were getting ready for a period of extreme prosperity. Now the outlook is not so hopeful although there is nothing to show that the times will be greatly depressed in the near future.

The paper industry is by no means alone in this respect. Textiles have been extremely hard hit and many New England mills are closed down or running on part time because they say that their production costs are too great for them to be able to make any money out of what the public is willing to pay.

When the United States Steel Company declared its extra dividend it was practically admitted that it was done on a basis of expectation rather than of actual large profit. It was hoped that the action would stimulate general confidence in the industry, tend to keep prices at their present levels and cause reluctant buyers to come into the market in the belief that higher quotations were on their way.

Buying power seems to be strong in certain lines and in others it is feeble. This is particularly true of the paper industry where news print is still enjoying a good demand while kraft paper and pulp have fallen off in price because there is so little call for them.

Book paper, too, is not in the demand it should be although it is expected prices will remain firm. The demand is gradual and there has been no rapid fire trading on the open market. Board is moving rather sluggishly although prices remain fairly firm.

Mechanical Pulp

Production of mechanical pulp has been back to normal for some time now and it is doubtful if present prices will hold over a much more extended period. High levels were reached when the lack of rain caused many of the grinding mills to close down and curtailed the output to a very marked extent. Now this has passed and although the demand is good, because of the call for news print, there seems to be little to warrant charging a price that was brought about by a condition that has now disappeared.

Chemical Pulp

Some of the grades of chemical pulp are in fairly good demand although not so good as dealers had hoped to find by this time in the year. Sulphite continues to be on pretty frequent call with a consequent grimness in price. Kraft, however, has fallen off both in demand and price and dealers are willing to make concessions in many instances to get it off their hands.

Old Rope and Bagging

Weakness has developed in the market for old rope and bagging although the better grades of the latter have somewhat the advantage of all grades of the former. Prices on paper are firm but it is said that in the open market there are a number of distressed lots available for greatly lower quotations.

Rags

Cheaper grades of rags seem to be in better demand than the more expensive ones just as has been the case for some time. Roofing mills are pretty good buyers, but writing and high grade paper mills have been slow takers.

Waste Paper

There are evidences that manufacturers are turning to some of the higher grades of paper for their raw material instead of pulp. This may be due to the belief that waste paper, being more sensitive to fluctuations in conditions than the more closely held pulp, is a better buy. They seem to feel that they are getting a more up to the minute price.

New York Trade Jottings

The Textile Color Card Association of the United States, Inc., announces the removal of its offices to 50 East 42nd street.

* * *

Among recent trade visitors in this city was W. T. Pilz, manager of the Everett Pulp and Paper Company, of Everett, Wash.

* * *

Reports of a price war having been started on bleaching powder by two big chemical houses in the city appear to be well founded. Prices have shown great weakness and the price cutting continues.

* * *

Philip S. Tilden, formerly Director of Sales, Acids, Heavy Chemicals, Lithopone, Dry Colors and Pigment Departments of E. I. Dupont de Nemours & Co., will take charge of the New York Office of F. Swift Gibson, with headquarters at 29 Broadway.

* * *

R. S. Kellogg, secretary of the News Print Service Bureau, is attending a convention in Utica, N. Y., today. Yesterday he made an address before members of the New York State Forestry School, at Syracuse, on "Forestry as Training for Citizenship." He also talked to the members of the pulp and paper courses tracing the development of the news print industry from its very beginnings down to the present time.

Czechoslovak Paper Industry

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., November 7, 1923.—Acting Commercial Attache Groves, Prague, says that the unfavorable situation in the Czechoslovak paper industry remains little changed from what it has been for some months past. This is one of the Czech industries most seriously hit by high operating costs, relatively high coal prices, and high freight rates, and those factors have been decisive in losing for the Czech mills the bulk of their export customers in favor of German and Scandinavian mills. Practically all of the mills in the country are operating on a much reduced scale, and a number of them have been for a long time entirely closed.

The pulp industry has fared somewhat better, particularly those mills located in the western part of Czechoslovakia, where the high Czech freight rates were of less consequence in exporting.

Trade Literature

Boothal Pulp and Water Saving. L. M. Booth, Booth Chemical Co. *Paper Mill* 47, No. 22, 32 (June 2, 1923). The Boothal pulp saving process consists in adding a small amount of a coagulant (with alum base) to the excess white water, delivering the quick-settling coagulated stock back to the paper machine and using the clear water from the top of the settling tank wherever required.—A. P.-C.

Market Quotations

Paper Stock Securities

New York Stock Exchange closing quotations November 5, 1923.

	BID	ASKED
American Writing Paper Company, pref.	2¼	3
International Paper Company, com.	29½	30
International Paper Company, pref. stamped	62	64
Union Bag & Paper Corporation	56½	58

Paper

F. o. b. Mill

Ledgers	11.00	@	38.00
Bonds	9.00	@	45.00
Writings—			
Extra Superfine	14.00	@	30.00
Superfine	14.00	@	30.00
Tub Sized	10.00	@	15.00
Engine Sized	8.00	@	11.00
News—f. o. b. Mill—			
Rolls, contract	3.75	@	4.00
Rolls, transit	4.00	@	4.25
Sheets	4.25	@	4.50
Side runs	3.50	@	4.15
Book, Cased—f. o. b. Mill—			
S. & S. C.	7.25	@	9.00
M. F.	7.00	@	8.75
Coated and Enamel	9.00	@	14.00
Lithograph	9.00	@	14.00
Tissues—f. o. b. Mill—			
White No. 1	.80	@	.90
White No. 2	.85	@	.95
Colored	1.15	@	2.00
Anti-Tarnish	1.50	@	2.00
Kraft	.95	@	1.15
Manila	.78	@	.85
Kraft—f. o. b. Mill—			
No. 1 Domestic	6.00	@	6.25
No. 2 Domestic	4.75	@	5.25
Imported	4.65	@	5.20
Screenings	3.00	@	3.20
Manila—			
No. 1 Jute	8.50	@	9.00
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.75	@	5.50
No. 2 Wood	4.00	@	4.50
Butchers	4.25	@	4.75
Fibre Papers—			
No. 1 Fibre	6.00	@	6.25
No. 2 Fibre	5.25	@	5.50
Common Bogus	3.50	@	—
Card Middles	4.00	@	5.00
Boards—per ton—			
News	55.00	@	60.00
Straw	61.00	@	63.00
Chip	50.00	@	55.00
Binders' Boards	75.00	@	80.00
Sgl. Mla. Lt. Chip	74.00	@	80.00
Wood Pulp	70.00	@	75.00
Container	70.00	@	80.00
Sulphate Screenings—			
Coarse	.80	@	.90
Refined	1.75	@	2.00
Ground Wood—			
Screenings	20.00	@	25.00
Glassine—			
Bleached, basis 25 lbs.	15.00	@	16.00
Bleached, basis 20 lbs.	17.00	@	18.00
Papermakers' Felts per ton—			
Dry	75.00	@	85.00
Saturated	65.00	@	75.00
Sheathing Paper per ton—			
Rosin Sized (red and gray, 30 lbs. per 500 sq. ft.)	55.00	@	65.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported	40.00	@	45.00

(F. o. b. Mill)

No. 1 Domestic	40.00	@	45.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—			
Bleached	4.50	@	5.00
Easy Bleaching	3.50	@	3.75
No. 1 strong unbleached	3.30	@	3.50
No. 2 Strong unbleached	2.85	@	3.10
No. 1 Kraft	3.25	@	3.40
Sulphate—			
Bleached	4.00	@	4.15

(F. o. b. Pulp Mill)

Sulphite (Domestic)—			
Bleached	4.30	@	5.00
Easy Bleaching Sulphite	3.25	@	3.50
News Sulphite	3.00	@	3.25
Mitscherlich	3.20	@	3.30
Kraft (Domestic)	3.10	@	3.30
Soda Bleached	4.25	@	4.35

Domestic Rags

New Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—			
New White, No.1	12.00	@	13.00
New White, No.2	6.00	@	6.50
Silesias, No. 1	7.00	@	7.50
New Unbleached	10.50	@	11.00
Washables	4.75	@	5.00
Fancy	5.50	@	6.00
Blue Overall	7.50	@	8.00
New Blue	5.00	@	5.55
New Black Soft	4.75	@	5.25
New Light Seconds	2.75	@	3.00
O. D. Khaki Cuttings	4.25	@	4.50
Men's Corduroy	3.50	@	3.75
New Canvas	6.50	@	7.00
New Black Mixed	2.60	@	2.80
White, No. 1—			
Repacked	5.75	@	6.25
Miscellaneous	5.00	@	5.25
White, No. 2—			
Repacked	3.80	@	4.12
Miscellaneous	3.25	@	3.50
St. Soiled, White	2.50	@	2.75
Thirds and Blues—			
Repacked	2.60	@	2.87
Miscellaneous	2.25	@	2.50
Black Stockings	2.75	@	3.00
Roofing Rags—			
Cloth Strippings	1.30	@	1.40
No. 1	1.30	@	1.40
No. 2	1.20	@	1.30
No. 3	.85	@	.95
No. 4	.85	@	.95
No. 5A	1.00	@	1.10

Foreign Rags

New Light Silesias	5.50	@	7.50
Light Flannelettes	8.00	@	
Unbl'chd Cottons	7.50	@	8.50
New White Cuttings	10.00	@	11.00
New Light Oxfords	6.00	@	7.25
New Light Prints	4.50	@	6.00
New Mixed Cuttings	2.00	@	2.50
New Dark Cuttings	1.80	@	2.20
No. 1 White Linens	10.00		nominal
No. 2 White Linens	6.50		nominal
No. 3 White Linens	5.00		nominal
No. 4 White Linens	3.50		nominal
Old Extra Light Prints	2.50		nominal
Ord. Light Prints	2.25		nominal
Med. Light Prints	2.00		nominal
Dutch Blue Cotton	2.50		nominal
German Blue Cottons	2.00		nominal
Ger. Blue Linens	3.00	@	3.25
Checks and Blues	1.25	@	1.50
Dark Cottons	1.25	@	1.40
Shoppery	1.00	@	1.05
French Blues	2.25		nominal

Bagging

Prices to Mill F. o. b. N. Y.

Gunny No. 1—			
Foreign	1.20	@	1.30
Domestic	1.30	@	1.35
Wool, Tares, light	1.30	@	1.40
Wool, Tares, heavy	1.30	@	1.40
Bright Bagging	1.05	@	1.20
Sound Bagging	.90	@	1.00
Manila Rope—			
Foreign	4.75	@	5.25
Domestic	5.00	@	5.50
New Bu. Cut	2.15	@	2.25
Hessian Jute Threads—			
Foreign	2.00	@	2.25
Domestic	2.00	@	2.10

Twines

Cotton—(F. o. b. Mill)—			
No. 1	.32	@	.36
No. 2	.29	@	.31
No. 3	.34	@	.36
India, No. 6 basis—			
Light	.17	@	.18
Dark	.16	@	.17
B. C., 18 basis	.41	@	.42
A. B. Italian, 18 Basis	.51	@	.61
Finished Jute—			
Dark, 18 basis	.29	@	.30
Light, 18 basis	.26	@	.27
Jute Wrapping, 3-6 Ply—			
No. 1	.20	@	.23
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.15	@	.17
Fine Tube Yarn—			
5-ply and larger	.19	@	.21
4-ply	.20	@	.22
3-ply	.20	@	.22
Unfinished India—			
Basis	.16	@	.17
Paper Makers' Twine			
Balls	.09	@	.11
Box Twine, 2-3 ply	.14	@	.15
Jute Rope	.15	@	.16
Amer. Hemp, 6	.30	@	.32
Sisal Hay Rope—			
No. 1 Basis	.14	@	.16
No. 2 Basis	.10	@	.12
Sisal Lath Yarn—			
No. 1	.14	@	.15
No. 2	.11	@	.13
Manila Rope	.18	@	.19

Old Waste Papers

(F. o. b. New York.)

Shavings—			
Hard, White, No. 1	4.25	@	4.35
Hard, White, No. 2	3.40	@	3.50
Soft, White, No. 1	3.30	@	4.45
Flat Stock—			
Stitchless	1.95	@	2.05
Over Issue Mag.	1.95	@	2.05
Solid Flat Book	1.75	@	2.00
Crumbled No. 1	1.50	@	1.60
Solid Book Ledger	2.10	@	2.50
Ledger Stock	1.90	@	2.00
New B. B. Chips	.85	@	.95
Manilas—			
New Env. Cut	2.70	@	2.80
New Cut No. 1	2.00	@	2.25
Extra No. 1 old.	1.55	@	1.65
Print	1.20	@	1.30
Container Board	1.10	@	1.15
Bogus Wrapper	1.00	@	1.10
Old Krafts, machine compressed Bales	2.25	@	2.35
News—			
No. 1 White News	2.15	@	2.30
Strictly overissue	1.25	@	1.35
Strictly Folded	1.00	@	1.10
No. 1 Mixed Paper	.70	@	.85
Common Paper	.60	@	.70

CHICAGO

[FROM OUR REGULAR CORRESPONDENT.]

Paper

F. o. b. Mill

All Rag Bond	35	@	40
No. 1 Rag Bond	30	@	35
No. 2 Rag Bond	14	@	25
Water Marked Sulphite	9½	@	13
Sulphite Bond	8	@	12
Sulphite Ledger	9½	@	14
Superfine Writing	18	@	24
No. 1 Fine Writing	14	@	18
No. 2 Fine Writing	12	@	14
No. 3 Fine Writing	9	@	12
No. 1 M. F. Book	5¾	@	7½
No. 1 S. & S. C. Book	6¼	@	7¾
Coated Book	8½	@	10¼
Coated Label	8½	@	10
News—Rolls, mill	3¾	@	4½
News—Sheets, mill	4½	@	4¾
No. 1 Manila	4¾	@	6
No. 1 Fibre	5¼	@	5¾
No. 2 Manila	4½	@	5
Butchers' Manila	4	@	4½
No. 1 Kraft	6¾	@	
No. 2 Kraft	5½	@	6
Wood Tag Boards	4¼	@	6
Screenings	4¼	@	5
Boards, per ton—			
Plain Chip	$47.50	@	$52.50
Solid News	54.00	@	56.50
Manila Lined Chip	65.00	@	67.50
Container Lined—			
85 Test	65.00	@	70.00
100 Test	70.00	@	75.00

Old Papers

F. o. b. Chicago

Shavings—			
No. 1 Hard White	3.70	@	3.80
No. 1 Soft Shav.	2.90	@	3.00
No. 1 Mixed	1.30	@	1.40
No. 2 Mixed	1.20	@	1.30
White Envel. Cuttings	3.70	@	3.80
Ledgers and Writings	1.85	@	2.00
Solid Books	1.75	@	1.85
No. 1 Books, Light	1.50	@	—
Blanks	2.20	@	2.25
Ex. No. 1 Manila	2.30	@	2.40
Manila Envelope Cuttings	2.50	@	2.60
No. 1 Manilas	1.30	@	1.40
Folded News (over issue)	1.00	@	—
Old Newpaper	.85	@	.90
Mixed Papers	.80	@	.85
Straw Clippings	.80	@	.85
Binders' Clippings	.80	@	.85
Kraft	2.25	@	2.35
New Kraft Cuts	2.40	@	2.50
Roofing Stock, f. o. b. Chicago, Net Cash—			
No. 1	32.00	@	—
No. 2	30.00	@	—
No. 3	28.00	@	—
No. 4	28.00	@	—

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT.]

Paper

Bonds	.10	@	.60
Ledgers	.15	@	.40
Writings—			
Superfine	.15	@	.20
Extra fine	.12	@	.22
Fine	.20	@	.30
Fine, No. 2	.20	@	.25
Fine, No. 3	.15	@	.20
Book, M. F.	.06	@	.11
Book, S. S. & C.	.08	@	.15
Book, Coated	.08	@	.15
Coated Lithograph	.10	@	.15
Label	.08	@	.15
News	.05	@	.07
No. 1 Jute Manila	.12	@	.13
Manila Sul., No. 1	.08	@	.10
Manila No. 2	.07½	@	.08
No. 2 Kraft	—	@	.10
No. 1 Kraft	—	@	.11
Common Bogus	.02½	@	.03
Straw Board	75.00	@	85.00
News Board	65.00	@	70.00
Chip Board	62.50	@	67.00
Wood Pulp Board, Carload Lots	1.25	@	1.50
Binder Boards—			
Per ton	75.00	@	80.00
Carload lots	75.00	@	80.00
Tarred Felts—			
Regular	48.00	@	50.00
Slaters	54.00	@	56.00
Best Tarred, 1-ply (per roll)	1.35	@	1.50
Best Tarred, 2-ply (per roll)	1.00	@	1.15
Best Tarred, 3-ply	1.50	@	1.65

Bagging

F. o. b. Phila.

Gunny No. 1—			
Foreign	1.25	@	—
Domestic	1.20	@	1.25
Manila Rope	5.00	@	6.00
Sisal Rope	.75	@	.80
Mixed Rope	.75	@	.80
Scrap Burlaps	1.00	@	1.25
Wool Tares, heavy	2.50	@	2.75
Mixed Strings	.75	@	.80
No. 1, New Lt. Burlap	1.75	@	2.00
New Burlap Cuttings	1.75	@	2.10

Old Papers

F. o. b. Phila.

Shavings—			
No. 1, Hard White	4.25	@	4.40
No. 2, Hard White	3.50	@	3.75
No. 1 Soft White	3.50	@	3.75
No. 2 Soft White	2.15	@	2.25

(Continued on page 60)

Imports and Exports of Paper and Paper Stock

(*Continued from page 54*)

Katzenstein & Keene, Inc., Daytonian, Liverpool, 84 bls. new cuttings.

Katzenstein & Keene, Inc., Bayern, Hamburg, 61 bls. new cuttings.

Katzenstein & Keene, Inc., Darien, Manchester, 58 bls. new rags.

E. Butterworth & Co., Inc., by same, 258 bls. rags.

Maurice O'Meara & Co., by same, 268 bls. bagging.

Train-Smith Company, by same, 213 bls. paper stock.

T. D. Downing & Co., Barbadian, Antwerp, 75 bls. flax waste.

First National Bank, by same, 68 bls. flax waste.

E. Butterworth & Co., Inc., by same, 85 bls. flax waste.

J. Spaulding & Sons Company, by same, 517 bls. flax waste.

Merchants' & Manufacturers' National Bank, Missouri, Hamburg, 57 bls. rags.

International Account Bank, by same, 113 bls. rags.

Order, by same, 561 bls. old rags.

Train-Smith Company, Breedijk, Rotterdam, 67 bls. rags.

International Purchasing Company, by same, 98 bls. manila rope.

Maurice O'Meara Company, by same, 117 bls. old ropes, 25 bls. old canvas.

E. Butterworth & Co., by same, 534 bls. old rags.

International Purchasing Company, Megantic, Liverpool, 294 coils manila rope.

E. Butterworth & Co., Inc., Daytonian, Liverpool, 89 bls. rags.

T. D. Downing & Co., by same, 39 bls. old ropes.

Maurice O'Meara Company, by same, 95 bls. rags.

Katzenstein & Keene, by same, 7 bls. new rags.

WASTE IN THE PULP AND PAPER INDUSTRY

By B. T. McBain, Assistant General Manager, Neekoosa-Edwards Paper Co.

How far do you ship your wood? Do you ship it with the bark on? Have you ever figured the amount of loss to your people on this account? If it is a loss, it is waste.

There are few mills in the Middle West and none on the Pacific Coast that receive their entire supply of wood with the bark removed. There are few mills in the Middle West that receive even a portion of their wood supply in the rossed condition. I have tried to be a missionary of the rossed wood idea in our district and while we receive the major portion of our supply of hemlock in that condition, all of our spruce, balsam and jack pine still comes with the bark on, some of it on so tight that it seems impossible to get it off.

Go through the Eastern section and see how many mills you will find with a wood supply 20 per cent to 25 per cent bark. They have learned their lesson, they have found out how much waste there was in the old method and have corrected it. You couldn't talk them into buying wood without the bark removed, because they know the difference. The differences in rossed wood over wood with the bark on are:

a. 20 per cent to 25 per cent more wood in a 128 cu. ft. cord.
b. Saving of labor in barking.
c. Saving of power in barking.
d. Saving of freight on bark.
e. Cleaner pulp which means cleaner paper.
f. Less depreciation from bugs, rot and disease.

I have talked with different mill managers about starting the use of rossed wood in the Middle West; but so far, without success. One said: "We get too much fuel value of our wood bark to have it rossed before shipping. If this man would figure the proposition out and then believe the figures, he would see that he is paying many times as much for his bark fuel as he would pay for coal substitute."

Another said: "We couldn't get anyone to supply us with wood if we put such a clause in our specifications."

If all would demand certain conditions, how would the wood owner or contractor sell his product, if he did not comply with such requirements? But, if that were a valid reason, if the benefits of rossed wood are so great, mills could co-operate in the buying of their wood supplies by forming co-operative rossing plants in certain districts where all wood could be properly treated before final shipment to the pulp mills.

A third one advanced the information that "We have always made our pulp from wood received with the bark on, and our customers must accept what we have to offer."

That sounds good, but the way the requirements of the trade are advancing from year to year, we fear this person must soon get off his high horse and try to make what the consumer really wants.

I could go on and give the various reasons the different people have advanced as to why they do not use and cannot expect to get rossed wood. The fact remains, however, that there is a big chance for saving money in wood preparing costs, in freight, on wood, wood handling at the mills, less depreciation from insects borings and rot, besides the greater benefits to accrue from the better and cleaner grades possible to make under the rossed wood plan.

We want it—but we cannot demand it alone; we can only get results from the co-operative work of all the mills, and it seems to the writer the time has come when all should co-operate to save this great waste—to stop this shipping and handling of unproductive material long distances that we might continue to compete in the markets of the world.

Calls on Creditors to File Claims

[FROM OUR REGULAR CORRESPONDENT.]

Holyoke, Mass., November 6, 1923.—President Sidney L. Willson of the American Writing Paper Company has sent out notices as receiver of the company that all creditors of the company shall file with him as receiver at his office at Holyoke or at his office at 41 Park Row, New York City, proved and sworn claims that they may have against the company on or prior to February 5, 1924, made up as of October 5, 1923. Notice is also given that if the claims are not submitted as required by law by that date that the company will be released from all obligations to pay the same.

Reject Paper Towel Bids

All bids received by the Bureau of Supplies and Accounts, Navy Department, on October 30 for 60,000 rolls of paper towels for the Brooklyn navy yard have been rejected and the item will be readvertised.

Banquet to Horace A. Moses

[FROM OUR REGULAR CORRESPONDENT.]

Holyoke, Mass., November 6, 1923.—Horace A. Moses, president of the Strathmore Paper Company of Mittineague and Woronoco was tendered a banquet Saturday night at the Hotel Kimball by the executive and department heads of the concern. It was the eighteenth annual "President's Dinner." Mr. Moses acted as toastmaster, a brief reception preceding the dinner. Dancing followed.

Paper Man Victim of Burglars

[FROM OUR REGULAR CORRESPONDENT.]

Monroe, Mich., November 2, 1923.—Burglars entered the home of H. Lee Rauch, general manager of the Consolidated Paper Company, Sunday night, and stole over $1,000 worth of jewelry and other valuables. The burglars ransacked the first floor thoroughly, and though Mr. and Mrs. Rauch were home at the time they failed to hear the intruders.

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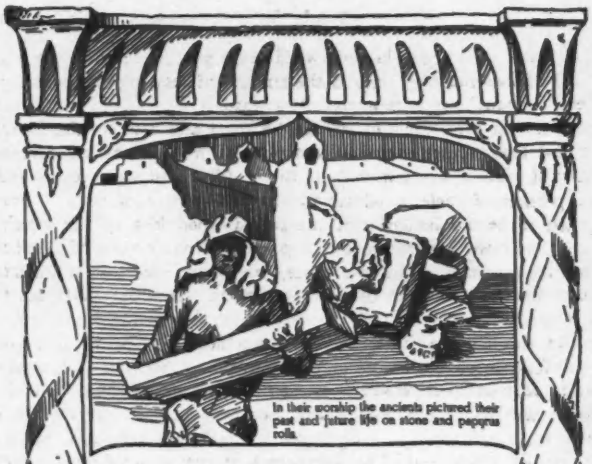

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Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, NOVEMBER 7, 1923.

Chemicals have failed to recover in the past week as much as had been hoped with a consequent effect on prices. There have been reductions all along the line although on paper the prices have remained approximately the same. A lamentable tendency toward throat cutting has appeared in some of the lines particularly in bleaching powder in which the battle has become so hot that it has attracted the attention of the daily papers. Just what the outcome of this war will be is difficult to predict, but it is certain to cause tremendous losses of money by both victor and vanquished.

Dealers seem to have greater supplies on hand than is customary at this time of year, but it is believed that the demand will soon take them up.

BLEACHING POWDER.—Trading in bleach was dull despite the willingness of several large manufacturers to sell at extremely low prices in order to beat out their competitors. Just why such a fight was started in a dull market is difficult to explain. It may be that when the campaign was launched it was thought that the market was recovering sufficiently to make things interesting. As the situation stands now it is impossible to quote because of the marked lack of firmness. As the price went slithering downward reputable dealers were taking 1.35 cents a pound for it.

CAUSTIC SODA.—Caustic also was in poor demand this week in comparison with what was expected of it. This should not be construed as meaning that caustic is in the doldrums, but dealers hope to see an increase very soon. The price is around 3.15 cents a pound on a flat basis. It is thought that the slightly lower price will attract buyers who have been heretofore holding off.

CASEIN.—Casein has not changed much during the past week with the demand about the same and no sign of any upward or downward changes in the price. It is still quoted at from 14 to 17 cents a pound in both the domestic and the foreign grades.

CHINA CLAY.—The same prices continue on china clay with the buying hardly what could be called brisk, but enough to keep things moving along at an even rate. Prices on the domestic grades are from $12 to $15 a ton and on the imported run from $16 to $20.

CHLORINE.—The demand for chlorine has not changed during the week with no further recovery reported. Orders are still for small quantities and it is reported that the dealers have some on hand. Prices continue at 4.15 to 4.30 cents a pound in tanks.

ROSIN.—Naval stores also remained in a static condition during the past seven days with the price about the same. The paper industry is not calling for so much of the product as it generally does at this time but manufacturers say that there is little hope for any reductions in price. The price is about $5.80 to $6 in 280 pound barrels.

SALTCAKE.—Saltcake is still in fair demand although there was a slight falling off in the call for it during the past week. The situation is not such as to cause any change in the price, however, which remains at from $22 to $24 a ton. It is said that concessions will be made in this on the open market in some instances.

SODA ASH.—Manufacturers of soda ash say that the demand for this is somewhat better than that for bleach and caustic although it is not as good as they had hoped it would be. It is still improving slowly and outside the paper industry dealers are having little trouble in disposing of it. The price is from 1.40 to 1.50 cents a pound on a flat basis.

STARCH.—The demand for starch is of sufficient strength to keep the price at the same level as last week which is 3.42 to 3.70 cents a pound for the paper maker's grade.

SULPHATE OF ALUMINA.—Alumina is not in quite as good demand as it was. The price remains at 2.00 to 2.25 cents for the iron free and 1.25 to 1.35 cents for the commercial grades per pound.

Market Quotations

(Continued from page 57)

No. 1 Mixed	1.60	@	1.75
No. 2 Mixed	1.25	@	1.50
Solid Ledger Stock	2.50	@	2.75
Writing Paper	2.25	@	2.50
No. 1 Books, heavy	2.00	@	2.25
No. 2 Books, light	1.40	@	1.50
No. 1 New Manila	2.75	@	3.00
No. 1 Old Manila	1.75	@	2.00
Container Manila	1.35	@	1.50
Old Kraft	2.25	@	2.50
Overissue News	1.50	@	1.60
Old Newspaper	1.25	@	1.50
No. 1 Mixed Paper	1.00	@	1.10
Common Paper	.80	@	.90
Straw Board, Chip	1.00	@	1.10
Binders Bd., Chip	1.00	@	1.10

Domestic Rags—New.
Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.12	@	.12¼
New White, No. 2	.07	@	—
Silesias, No. 1	.07¼	@	.07½
New Unbleached	.10	@	.11
Washables	.04½	@	—
Fancy	.05¼	@	.05½
Cottons—according to grades—			
Blue Overall	.05½	@	.05¾
New Blue	.02¼	@	.02½
New Black Soft	.05¼	@	.06½
New Light Seconds	.02¼	@	.02½
Khaki Cuttings	.11	@	.04½
Corduroy	.03½	@	.04
New Canvas	.08¼	@	.08½
New Black Mixed	.04	@	—
Old White, No. 1—			
Repacked	.06	@	.06½
Miscellaneous	.04½	@	.04¾
White, No. 2—			
Repacked	.03½	@	.04
Miscellaneous	.03	@	.03¼
Thirds and Blues—			
Repacked	2.50	@	2.75
Miscellaneous	2.15	@	2.35
Black Stockings	2.75	@	3.00
Roofing Stock—			
No. 1	1.35	@	1.40
No. 2	1.25	@	1.30
No. 3	.75	@	.90
No. 4	1.15	@	1.20
No. 5A	1.10	@	—
B			nominal
C			nominal

BOSTON

[FROM OUR REGULAR CORRESPONDENT.]

Paper

Bonds	.09½	@	.63
Ledgers	.09½	@	.55
Writings	.08½	@	.42
Superfine	.16	@	.26
Fine	.15	@	.18
Books, S. & S. C.	.07¼	@	.12
Books, M. F.	.07¼	@	.09½
Books, coated	.09	@	.15
Label	.09	@	.13
News, sheets	4.75	@	6.00
News, rolls	4.50	@	5.75
Manilas—			
No. 1 Manila	6.00	@	7.00
No. 1 Fiber	.06½	@	.07
No. 1 Jute	9.00	@	10.50
Kraft Wrapping	.07	@	—
Common Bogus	3.50	@	3.85

Boards

(Per Ton Destination)

Chip	$55.00	@	—
News, Vat Lined	55.00	@	—
Wood, Vat Lined	65.00	@	—
Filled News Board	55.00	@	—
Solid News Board	70.00	@	75.00
S. Manila Chip	70.00	@	75.00
Pat. Coated	87.50	@	95.00

Old Papers

Shavings—			
No. 1 Hard White	3.90	@	4.10
No. 1 Soft White	3.00	@	3.25
No. 1 Mixed	1.00	@	1.25
Ledgers & Wedding	2.25	@	—
Solid Books	2.05	@	2.10
Blanks	2.10	@	2.35
No. 2 Light Books	1.50	@	—
Folded News, overissues	1.10	@	1.20
Gunny Bagging	1.10	@	1.25
Manila Rope	5.87½	@	—
Mixed paper	.75	@	.80
Old News	.90	@	.95
Old Kraft	1.90	@	2.10
No. 1 Scrap Burlap	1.00	@	1.10
No. 2 Roofing Bagging	.90	@	—
Mixed Strings	1.00	@	1.10
No. 1 Roofing Rags	1.45	@	1.50

TORONTO

[FROM OUR REGULAR CORRESPONDENT.]

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.11	@	.12½
Light tinted	.12	@	.13½
Dark Tinted	.13½	@	.15
Ledgers (sulphite)	—	@	.13
Writing	.09½	@	.12
News, f. o. b. Mills—			
Rolls (carloads)	3.75	@	—
Sheets (carloads)	—	@	4.50
Sheets (2 tons or over)	—	@	4.75
Book—			
No. 1 M. F. (carloads)	9.00	@	—
No. 2 M. F. (carloads)	8.00	@	—
No. 3 M. F. (carloads)	7.50	@	—
No. 1 S. C. (carloads)	9.50	@	—
No. 2 S. C. (carloads)	8.50	@	—
No. 1 Coated and litho	14.50	@	—
No. 2 Coated and litho	13.50	@	—
No. 3 Coated and litho	12.75	@	—
Wrapping—			
Grey	5.00	@	—
White Wrap	5.75	@	—
"B" Manila	6.00	@	—
No. 1 Manila	7.25	@	—
Fiber	7.25	@	—
Kraft, M. F.	8.00	@	—
M. G.	8.15	@	—

Pulp

(F. o. b. Mill)

Ground wood	$50.00	@	55.00
Sulphite easy bleaching	60.00	@	65.00
Sulphite news grade	55.00	@	60.00
Sulphite, bleached	85.00	@	90.00
Sulphate	70.00	@	75.00

Old Waste Papers

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut.	3.65	@	
Soft White Book shavings	3.35	@	
White Blk. News	2.20	@	
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.85	@	—
Light and Crumpled Book Stock	1.70	@	—
Ledgers and Writings	1.85	@	2.25
Solid Ledgers	2.00	@	—
Manilas—			
New Manila Cut.	2.15	@	
Printed Manilas	1.55	@	—
Kraft	2.25	@	
News and Scrap—			
Strictly Overissue	1.10	@	
Folded News	1.10	@	
No. 1 Mixed Papers	.90	@	

Domestic Rags—
Price to mills, f. o. b. Toronto Per lb.

No. 1 White shirt cuttings	.12	@	.12½
No. 2 White shirt cuttings	.06	@	—
Fancy shirt cuttings	.05½	@	.06
No. 1 Old Whites	.04½	@	—
Third and blues	.02½	@	.02¾
	Per cwt.		
Black stockings	.03	@	—
Roofing stock:			
No. 1	—	@	—
No. 2	—	@	—
Manila rope	.05½	@	.06
No. 3	1.55	@	—
Gunny Bagging	.01½	@	—